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Mr. Buckler

ROYAL COMMISSION

ON

ENERGY

HEARINGS

HELD AT

CALGARY,

ALTA.

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ROYAL COMMISSION
ON
ENERGY

Hearings held at Calgary, commencing Monday, February 3, 1958, at 10.00 A.M.

PRESENT:

Mr. H. Borden, C.M.G., Q.C.	-	Chairman
Mr. J.L. Levesque,	-	Member
Mr. G.E. Britnell,	-	Member
Mr. G.G. Cushing,	-	Member
Dr. R.D. Howland,	-	Member
Mr. L.J. Ladner, Q.C.	-	Member
Dr. R.M. Hardy,	-	Member

COMMISSION COUNSEL:

Mr. A.S. Pattillo, Q.C.

Mr. Miles H. Patterson.

Mr. J.F. Parkinson	--	Secretary to the Commission.
Major N. Lafrance	--	Assistant Secretary to the Commission.

APPEARANCES:

Representing Trans-Canada Pipe Lines Limited:

Mr. N.J. McNeill	-	Counsel
Mr. F.P. Layton	-	Associate Counsel
Mr. Charles S. Coates	-	President
Mr. William B. Tippy	-	President of Commonwealth Services Inc.
Mr. H. Dix Fowler	-	Vice-President
Mr. R.C. Berry	-	Vice-President and Treasurer
Mr. Ralph S. Orme	-	Natural Gas Consultant, Commonwealth Services Inc.
Mr. V.L. Horte	-	Chief Gas Supply Engineer
Mr. Gladstone Stewart, Jr.	-	Vice-President, DeGolyer and MacNaughton, Dallas, Texas.
Mr. N.E. Tanner	-	Chairman of the Board

- - - - -

Monday,
February 24, 1958

---On resuming at 9.45 a.m.

---Mr. Commissioner Cushing was not present.

THE CHAIRMAN: Gentlemen, the Commission will resume its hearings. Mr. Pattillo?

MR. PATTILLO: Mr. Chairman, I think we should start this morning with Mr. Stewart, of DeGolyer & MacNaughton, who, I understand, wants to explain some of the evidence that he gave on Friday afternoon in connection with reserves and perhaps we can clear that up before we go on.

MR. STEWART, JR.: Mr. Pattillo, we have here several tabulations on some of the information that was requested on Friday.

MR. PATTILLO: Could I have copies of those for the Commission and for the record?

MR. STEWART, JR.: Mr. Horte will put those in and explain.

MR. HORTE: For the record, Mr. Pattillo, I might just identify the various tabulations in the order that they are in this little bundle which we have just handed out.

The first tabulation of one page shows a

summary of gas reserves as of November 1, 1957.

MR.PATTILLO: I think we should have that marked as C-24-1.

---EXHIBIT NO. C-24-1: Summary of gas reserves as of November 1, 1957. (Contracts as of February 23, 1958). Trans-Canada Pipe Lines Limited.

MR. HORTE: That is with contracts as of February 23rd, 1958.

BY MR. PATTILLO:

Q. Now, do I understand that the left hand column shows the quantity that you have under contract as being 5,190,404,000,000 and the total that you have under permit of that amount would be 5,048,680,000,000 and when reduced to the pressure is 4,935,573,000,000?

MR. HORTE: That is correct, at the 14.73 pressure which is the base pressure for our sales to get it on a common basis with our sales.

Q. And in addition to that the second column shows the probable in the fields that are under contract and you have under the probable a permit for 1,391,600,000,000, bringing a total under permit of 6,327,173,000,000, is that correct?

MR. HORTE: Sir, those totals are the totals of the reserves proved and probable for the fields in which we have contracts. They are not the quantities

that we have on the contract but the total field reserve.

The next three columns show the amounts in each of the fields that Trans-Canada has under contract.

Q. And under contract to export?

MR. HORTE: Right, and we have a permit to take gas from those fields. As you can see, the quantities exceed the total permitted quantity from the Province of Alberta of 4,350,000,000,000.

Q. But the quantity approved does not -- the quantity approved shown in the third column from the right hand side is 4,170,349,000,000?

MR. HORTE: That is at a pressure of 14.73. Our permit has a pressure base of 14.4. I think you have to compare that figure immediately above that of 4,265,919,000,000.

Q. Right. Now, would you please explain the next document that you have which I suggest be marked C-24-2.

---EXHIBIT NO. C-24-2: Summary by companies of gas purchase contracts showing estimated gas reserves under contract and maximum daily contract volumes. Trans-Canada Pipe Lines Limited.

MR. HORTE: This is a summary in detail of our gas purchase contracts showing the contracted for maximum daily volumes by companies, by fields, and

showing the reserves which Mr. Stewart has prepared over on the left hand side under contract in each case. This is a detail of what is shown on the first tabulation put in in the last three columns of the first tabulation.

Q. So this also reflects the position as it is today?

MR. HORTE: Yes, sir.

Q. Now, Mr. Stewart, will you tell us what changes there have been in the position from today as tabulated on C-24-1 and the position that existed as at the time of the financing in February, 1957?

MR. STEWART, JR.: Mr. Pattillo, we have another tabulation included with this group entitled "Estimated Gas Reserves under Contract, Trans-Canada Pipe Lines at the time of initial financing".

Q. That has not yet been filed?

MR. STEWART, JR.: It should have been.

THE CHAIRMAN: Mr. McNeill, is it not among these documents?

MR. McNEILL: It is not among these that have just been filed but it is among those that have been run over the week end and apparently not assembled as yet.

MR. STEWART, JR.: We neglected to bring down this tabulation but they will be sent out. I can summarize this for you now.

At the time of financing approved reserves under contract to Trans-Canada were 4.5 trillion cubic feet. That is at a pressure base of 14.4 pounds per square inch absolute. At the present time, as shown on Exhibit C-24-1, the proved reserves under contract to Trans-Canada are approximately 4.396 trillion cubic feet. That figure is shown as the first total in the third column from the right on Exhibit C-24-1.

MR. PATTILLO: Q. Will you explain why there has been a drop between the figure that you had of a year ago and now?

MR. STEWART, JR.: Development in the Pincher Creek field is primarily responsible for that reduction. A comparison of the reserves at that time at Pincher Creek and now would show a reduction in proved reserves in the order of 400 billion cubic feet since the time of initial financing. There have been increases in certain other areas such as Bindloss and Gilby which partially offset that reduction caused by development at Pincher Creek. The net reduction, Mr. Pattillo, is in the order of approximately 100 billion cubic feet net; that is proved reserves.

Q. Right. Now, Mr. Stewart, as I understand your evidence on Friday you said that having regard to the proved reserves under contract at the time of the financing of the purchase contracts of various distributors who proposed to take off the

line, you gave a certificate that under the terms of the permit to export reserves were adequate to last more than eighteen years.

MR. STEWART, JR.: Yes. The requirements of Trans-Canada would be given in part out of production of those reserves over a period of time in excess of 18 years, that is correct.

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Q. Now, looking at the reserves as they are disclosed in Mr. Orme's exhibit, which is C-19-4, and in Exhibit 5, which is a breakdown of the Canadian market alone for the period of five years commencing with November of 1957, assuming first that the Province of Alberta would be prepared to amend the annual allowable for export, how long do you estimate the present reserves under contract and permit to export in the aggregate, would last?

MR. STEWART Jr.: Assuming the revision of the permit and gas permit contracts?

Q. Yes.

MR. STEWART, Jr.: In other words, considering all of the capabilities of the fields to produce, it would be my judgment they would be deficient in the fifth year, 1961-62. I doubt that the reserves under contract would be able to produce a rate higher than shown as required in the fifth year.

Q. Assuming that the Province will not increase the annual allowable for export under the present contracts, under the present contracts with producers, but the company has committed itself to supply the demand as shown on this Exhibit 5, how much do you say the company must obtain under contract in the way of additional supplies in order for them to fulfill this demand?

MR. STEWART, Jr.: We are speaking now of the Canadian markets only?

Q. We are speaking of the Canadian markets only.

MR. STEWART, Jr.: I have made an approximate calculation of that and, in my opinion, an additional 2.5 trillion feet would be required during the first five years. The assumption is made that the Canadian market will build up as shown during the first five full years of operation and then level off in that full fifth year of requirement.

Q. Would you explain that levelling off in the fifth year? When you were making your estimates a year ago and you said the reserves were adequate for more than 18 years, did you work on the same circumstances? You took the building-up for the same five years and then estimated a levelling off?

MR. STEWART, Jr.: Yes, five full years.

Q. Five full years?

MR. STEWART, Jr.: At that time the requirements is shown -- I think it is in the trust agreement.

Q. So that, when you are now talking about this additional 2 trillion ---

MR. STEWART, Jr.: 2.5 trillion.

Q. When you are talking about this 2.5 trillion, you are applying the same basis, the same yardstick, the same demand?

MR. STEWART, Jr.: That is right.

Q. So we are not talking about apples and oranges, but apples all the way.

MR. STEWART, Jr.: That is right.

Q. The 2.5 is based on an increase for five years and then a levelling off?

MR. STEWART, Jr.: The present permit provides for 4.35 trillion, an additional 2.5 trillion would be required.

Q. Mr. Stewart, you used the word "approximately", and I know that in the time I have allowed you, you could not work the thing exactly. How much margin of error may be in that word "approximately"?

MR. STEWART, Jr.: As to the method of calculation, Mr. Pattillo, I think it would be very close. The margin of error would come in attempting to evaluate the potential of the new reserves that might be permitted on contract. I have assumed that new gas that may be permitted would have the same relative potential, that is deliverability, to reserves as the gas now on permit. That is an assumption that has to be made; it is a fundamental assumption.

Q. How much do you say, applying the same principles that you have just applied -- that is, the first five years and then the levelling off -- how much additional gas would be required if the Emerson contract was permitted and was in full force and effect?

MR. STEWART, Jr.: That would require an additional 4.5 trillion feet in excess of the present permit.

Q. So that the difference the Emerson contract makes is that figure which you have just given us less 2 1/2 trillion?

MR. STEWART, Jr.: Yes, and that would be 2 trillion feet.

Q. Now, can you give us any idea of how much would be required if you did not apply this levelling off principle at the end of the fifth year and you simply accepted Mr. Orme's figures as to market potential? How much additional gas would be required?

MR. STEWART, Jr.: We have to have some ground rules on that.

Q. You name your ground rules, Mr. Stewart.

MR. STEWART, Jr.: If you would assume that sufficient reserves would be necessary to meet the peak requirement in the 30th year, as shown in Mr. Orme's exhibit, the total reserves necessary to satisfy that condition and meet the requirements during the 30-year period, would be in the order of, and this is just an approximation, 45 trillion. I would say between 45 and 50 trillion feet.

Q. Now, going back to the earlier calculation which you were discussing, with the levelling off at the end of five years and 2 1/2 trillion excess Canadian requirements, what do you figure the annual allowance extra would have to be? In other words, at the present time they have a permit of more than 4 trillion and they are allowed to export so many feet

per year. Now, you are talking about 2 1/2 trillion. Have you done any calculations as to how much extra would be required per year?

MR. STEWART, Jr.: If I understand you correctly, Mr. Pattillo, you and I know at what rate this extra gas would need to be obtained on permit on an annual basis.

Q. That is right.

MR. STEWART, Jr.: In my opinion, rather than doing it on an annual basis, I believe it would be preferable to do it in two, possibly three, stages.

Q. Will you explain that to the Commission -- what you mean by the stages, why you say it is preferable, and how the thing would work?

MR. STEWART, Jr.: From a practical -- in order to construct facilities to transport this new gas, in order to finance these facilities, you would have to have a permit in advance of this construction and financing bases. You cannot wait until the year you need the gas to purchase the gas, to get a permit for it and to construct for moving the gas. In the case of the requirements without Emerson, just the Canadian markets, I would think a permit would be necessary for, approximately, 1.2 trillion some time prior to November, 1959. That would permit financing during the winter and construction during the next construction season. The next permit should be obtained prior to November, 1961 in the amount of

approximately, 1.3 trillion cubic feet, and that will permit financing and construction to meet the last year's load. There are several ways it could be done. It would depend on circumstances at the time, but I think this would be a realistic estimate of the time that this gas would be required.

Q. This staging process you are talking about, I assume the reason for that is the company thereby avoids tying up a lot of capital earlier than necessary and, at the same time, it has got the permit and has got the purchase contracts sufficiently far in advance so that all arrangements can be made when the line needs gas. Is that right?

MR. STEWART, Jr.: Yes, that is correct. It is not practical, in my opinion, to expand pipeline every day and every month with construction. Of course, you do need facilities, from time to time, but the major increase is usually done at a sizable stage.

Q. That would be the situation if the Emerson contract was in there and you needed another 2 trillion?

MR. STEWART, Jr.: Since the Emerson, according to this projection, comes in early, I think you would have to obtain a permit for 3.2 trillion at November, 1959. This is just the additional Emerson reserves that would be required by that time in addition to the Canadian requirements.

Q. And there would be no change in the latter one of 1.3?

MR. McNEILL: Mr. Pattillo, we will probably have the tabulations that Mr. Stewart referred to which sets out the estimated gas reserves under contract at the time of the initial financing.

MR. PATTILLO: Could we have this document marked Exhibit C-24-3?

---EXHIBIT NO. C-24-3: Estimated gas reserves under contract to Trans-Canada Pipe Lines at the time of initial financing.

MR. PATTILLO: Q. Now, Mr. Stewart ---

MR. McNEILL: Excuse me once again, Mr. Pattillo. On the original bundle of tabulations that we handed to you -- although this may have been your intention -- you have only discussed the first two that were contained in the clip.

MR. PATTILLO: I have so many floating around here right now.

Well, there was one document in connection with that second bundle that I don't think I will discuss, because it is simply a different way of arriving at the very figures that we were discussing.

Q. Is that not correct?

MR. HORTE: Yes, sir, it shows the contracts by fields, by companies.

Q. But then we have here a price schedule, and that certainly "snuck in" by the back door. What is this price schedule? Is it on your present contracts?

MR. HORTE: In the exhibit, Exhibit C-24-2, on the last page of that exhibit we show totals on that page for gas purchased under price schedule No. 1 and for gas purchased under price schedule

No. 2. These two price schedules are those referred to in Exhibit C-24-2.

THE CHAIRMAN: Mr. Pattillo, would it not be wise to mark the summary of fields of gas as Exhibit C-24-4 and the price schedules as Exhibit C-24-5?

MR. PATTILLO: I think it would, Mr. Chairman.

---EXHIBIT NO. C-24-4: Summary by fields of gas purchase contracts, showing estimated gas reserves under contract and maximum daily contract volumes.

---EXHIBIT NO. C-24-5: Price schedules Nos. 1, 2 and 3.

MR. HORTE: That price schedule, sir, also is that referred to in Exhibit C-24-4.

MR. PATTILLO: Q. Now, I am not sure I have that straight yet in my mind. Where do you refer, in Exhibit C-24-4, to a price schedule?

MR. HORTE: On the last page of that, on page 4.

Q. Oh, yes.

MR. HORTE: Where, again, we show the totals under price schedule No. 1 and the totals under price schedule No. 2.

Q. Well, now, would you explain to us the difference between price schedule No. 1 and price schedule No. 2?

MR. HORTE: The difference between price schedule No. 1 and price schedule No. 2 amounts to a difference of 2 cents in each year throughout the term of the contract, price schedule No. 2 being 2 cents higher than that shown in price schedule No. 1.

Q. Now, what is the explanation for that?

MR. HORTE: The explanation for that, sir, is that we increased our price at that time, in purchasing that new additional gas, to 12 cents.

Q. When did that increase in price come into effect?

MR. HORTE: That came into effect approximately May of 1957.

Q. Subsequent to the financing?

MR. HORTE: Yes, it was after the financing took place.

Q. And is that your present offering price for gas, as shown in price schedule No. 2?

MR. HORTE: No, sir, we are now offering, starting in the first year, from the day of initial delivery through to December 31, 1959, 13.25 cents per Mcf; starting the following year, January 1, 1960 through December 31, 1960, 13.25 cents also and an escalation of .25 cents per year throughout the remainder of the life of the contract, or until January 1, 1982.

I have copies of that price schedule, sir.

Q. Have you got that here? Perhaps we might as well put them in, right now, as part of Exhibit C-24-5. This is headed "Price Schedule No. 3".

THE CHAIRMAN: Did you say when this came into effect, price schedule No. 3, 13.25 cents?

MR. HORTE: Let me check, sir.

Sir, this price was first offered for large quantities of gas, if they could be obtained in one field, and I refer particularly to the Dick Lake field; this price was offered for gas last spring, at the time when we were offering the 12-cent price for other smaller reserves. We had been unable to obtain the 12-cent price and that has been in effect since that date until recently after the New Year, at which time we began offering the 13.25-cent price for all gas that we are now purchasing.

MR. PATTILLO: Q. Now, Mr. Stewart, assuming that Mr. Orme's market calculations turn out to be the right ones and gas had to be found to meet those demands, and you told us that you estimated something more than 40 trillion would be required, have you done any calculation as to the stages that the company would have to pick up that gas in, and the quantities?

MR. STEWART, JR.: No, I have not.

Q. I suppose you just thought, like myself, that that was so improbable that it was not worth while?

MR. STEWART, JR.: Well, I am not responsible for the market study.

MR. PATTILLO: Well, I think that is all I am going to ask you for the moment, Mr. Stewart. May I have Mr. Orme and Mr. Tippy back?

THE CHAIRMAN: Before you leave Mr. Stewart, may I get clarification, Mr. Pattillo?

Is there a so-called favoured nation clause in your gas contract?

MR. STEWART, JR.: Mr. Horte would be the ---

MR. HORTE: No, sir, not what is normally known as a favoured nation contract. There is a contract provision that provides, in the year 1968 and thereafter, that we will pay to any producer the weighted average cost on our gas at that time if his price should be less than that weighted average cost. To that extent there is a favoured nations clause in the contract.

THE CHAIRMAN: Then, in other words ---

MR. McNEILL: Excuse me, sir. I think there is something Mr. Horte should add to that.

MR. HORTE: Sir, Mr. McNeill just mentioned to me a contract that we do have in the Homeglen-Rimbey field, a 12-cent contract with the California Standard Company, which was contracted in May, 1957, that does have what we call a field favoured nations clause in it, which states,

in effect, that should we pay anyone else in that particular field more money for their gas that we will increase the price in that contract to that same quantity. That is the only contract of that type that we have.

THE CHAIRMAN: To sum it up, with the exception of that field contract, which applies, presumably, in a limited area ---

MR. HORTE: Yes, sir.

THE CHAIRMAN: --- then the increase in price, let us say, in your price schedule No. 3, that you will pay will have no bearing on the other producers at all until 1968, when you come to consider the weighted price clause in your contract?

MR. HORTE: That is correct.

THE CHAIRMAN: So if you go to a price schedule No. 4 or to a price schedule No. 5 as the years go on, the same ---

MR. HORTE: They would not benefit from those increases until the time the weighted average provision came into effect.

MR. STEWART, JR.: Mr. Pattillo, you just asked me a question regarding the projection made over the fifth year of full operation.

Q. Yes?

MR. STEWART, JR.: And I answered that we had not made them for the entire period. I had forgotten that Mr. Tippy and I worked up some numbers

on a projection based on Mr. Orme's market and I would be happy to give you those, if you like.

Q. Right.

MR. STEWART, JR.: On this projection, this is with Emerson included. The total permitted volume required would be 14.6 trillion. Now, that is assuming that Mr. Orme's estimate obtains up through the tenth year, and it levels off at that figure, which means that with 4.35 trillion now permitted, the additional now would be 10.25 trillion cubic feet.

That comes in these stages, as you likely have this for comparison with the one I gave you previously: required in 1959, 3.2 trillion; required in 1961, 1.3 trillion; required in 1963, 1.875 trillion; required in 1965, 1.875 trillion; required in 1967, 2 trillion.

Q. And those requirements that you have just listed for those various years are in addition to the gas presently under contract for which a permit has been obtained?

MR. STEWART, JR.: That is correct.

MR. PATTILLO: Mr. Chairman, those are all the questions, at this stage, I propose to ask Mr. Stewart, and I go back to the examination of Mr. Orme and Mr. Tippy.

MR. TIPPY: Mr. Pattillo, during the course of the hearing on Friday you asked for a figure which I was not able to give -- I did not give at the time and, if it is appropriate, I could give you now the figure for the amounts in relation to the December, 1956 market study which were under contract at the time of the financing in February, 1957.

Q. Right.

MR. TIPPY: The investigated -- and this refers to Volume 2 of the Economic Feasbility Report, in the section entitled "Appendix A to the February 6, 1957 Review, Exhibit 8FR, Schedule 3, Plan 2 -- at the time of the financing, the following companies had signed contracts with Trans-Canada:

Inter-State Gas Company; Winnipeg and Central Gas Company; Northern Ontario Natural Gas Company Limited; The Consumers Gas Company of Toronto; Union Gas Company of Canada Limited and Quebec Natural Gas Corporation.

By years, the amounts for those companies who had contracts are as follows: 1957-58, 27,557,637 Mcf, or 86.7 per cent of the total required in Mcf for that year; in 1958-59, 82,164,454 Mcf -- I think that last figure is a 4 -- or 81.1 per cent; in the year 1959-60,

107,730,783 Mcf, or 84.3 per cent; in the year 1960-61, 132,362,092 Mcf, or 85.8 per cent; in the year 1961-62, 143,495,297 Mcf, or 84.3 per cent; in the year 1962-63, 160 142,016 Mcf, or 85.8 per cent.

Q. Now, those figures that you have just given us, Mr. Tippy, can be compared with Exhibit 5, pages 1 and 2 attached to Exhibit C-19-4, as shown in the middle of the page under the headings "Total Contracted For", and the percentage figures under "Annual Load Factor", is that right?

MR. TIPPY: The percentage figure under the annual load factor would not relate to this. The figures for annual deliveries in each of the years under contract would be quite comparable to the figures that were under contract in February, 1957, at the time of financing. There is one slight difference, if I may ---

Q. Yes?

MR. TIPPY: These Canadian markets not contracted for here are different, in that, as regards particularly to Lakeland, Quebec Natural and Consumers Gas Company of Canada ---

Q. Mr. Tippy, I don't want to get ahead to that yet.

MR. TIPPY: I am sorry.

Q. I want to be sure we are talking about the same thing.

MR. TIPPY: They are approximately the same.

Q. For example, in Exhibit 5 at page 1, you show, under "Contracts for Year 1957-58, 18,378,000,000 and, as opposed to the figure which you gave a few minutes ago, of a year ago of 27,557,637, that is the figure to which it is opposed, now, is that right?

MR. TIPPY: That is correct, Mr.Pattillo. The reason it is a smaller figure is that the Quebec Natural Gas Corporation volume for the year 1957-58 had been reduced through the time at which natural gas is ---

THE CHAIRMAN: Might we have that figure again?

MR. PATTILLO: 27 million.

MR. TIPPY: 27,557,637.

Q. As opposed to 18 million?

MR. TIPPY: Yes, 18,378,900.

Q. Mcf?

MR. TIPPY: That is correct.

Q. And in Exhibit 5, in arriving at the 18 million, there are amounts shown as contracted to Saskatchewan Power Corporation, Plains Western Gas and Electric Company and Lakeland Natural Gas Company which were not included in the estimate of a year ago?

MR. TIPPY: That is correct.

Q. Now, would you please explain this percentage figure that you were using a year ago?

MR. TIPPY: The percentage I gave of 86.7 for the year 1957-58 was a percentage which 27,557,637 bears to the total estimated requirements in Mcf east and west of Winnipeg shown on the schedule of 31,782,917 Mcf. It was a percentage of the total requirements.

Q. Oh, I see. So if we were making the same comparison of Exhibit 5 in Mr. Orme's calculation, we would ascertain the percentage of 18,378,000 and to 23,659?

MR. TIPPY: That is correct.

Q. Now, there are a few things that are puzzling me here:

Why would you include, in the figures for 1957-58, Winnipeg and Central Gas Company when they are fighting down there between themselves and some other companies as to who is going to have the franchise, and we have got a Commission appointed, which has not yet begun to sit, and nobody seems to know who is who. Now, how are you, with any degree of assurance, able to figure any figure for that company in this year?

MR. TIPPY: Mr. Pattillo, the figure taken in both cases was the contract figure with Winnipeg and Central Gas Company and, at the time the contracts were entered into, they believed

they had the entire market.

Q. Are they on a take-or-pay basis?

MR. TIPPY: I would like Mr. Orme to answer that. He is familiar with the individual contracts.

MR. ORME: Yes, sir, they are on a take-or-pay basis; the first year, 95 per cent load factor; the second, third and fourth, 75 per cent load factor, and the fifth year, 50 per cent load factor.

Q. No wonder that they sent out the letter asking for a reorganization.

Mr. Orme, in putting that figure in, did you not make any study of the present situation regarding Winnipeg and Central Gas Company, the probabilities of their likely getting a franchise and their ability to pay in the event that they didn't?

MR. ORME: Yes, sir, I took that into consideration, to the extent that Winnipeg and Central have a franchise for the greater part of Winnipeg itself. The arguments are with respect to franchise of some of the outlying parts of Winnipeg and some of the adjacent suburban areas. Irrespective of who ultimately gets the franchise, in these disputed areas,they of course will be contracted for, and, if they are other than Winnipeg Central, they will be contracting for gas in Trans-Canada, so the volumes would be the same irrespective of who purchases gas.

Q. Mr. Orme, you have had a lot of experience with the FPC in the United States, haven't you?

MR. ORME: Yes, sir.

Q. You realize that when these quarrels begin, it takes quite a while to get them settled?

MR. ORME: Yes, sir.

Q. It would not be surprising if, because of this quarrel, it was a period of years before we knew what the Winnipeg situation was going to be?

MR. ORME: I think that may well be and there isn't any doubt but what it has had a retarding influence on the gas load in the Winnipeg area.

Q. Mr. Orme, taking your Exhibit 5 and doing what Mr. Stewart did, working on the basis of five years and then assuming a levelling off at that point, carrying through the assumption of the permit, what do you say would be the market requirements of the various distributors in the term of the permit?

MR. ORME: I don't believe I understand your question, Mr. Pattillo.

Q. Well, what I am trying to get at is this: if you take the figures you have shown here for the next five years and then draw a projection line from the fifth year right out through

the life of the contract, assuming neither any reduction nor increase in demand thereafter, what do you say is the quantity of gas that is going to be required to supply the Canadian market?

MR. ORME: You mean in so far as reserve requirements are?

Q. No, I didn't mean in so far as reserve requirements. I meant how much gas do you say they are going to sell?

MR. ORME: Well, in the fifth year I estimate that Trans-Canada will sell 355,832.8 Mmcf of gas, referring to the fifth year, the year 1962-63.

Q. That includes, however, the Emerson market, does it not?

MR. ORME: No, excluding the Emerson market, the comparable figure for Canadian sales in the year 1962-63 is 254,348.4 Mmcf, to which, of course, will have to be added a portion of the 32,348.4 allowance for Trans-Canada Pipe Lines fuel and losses.

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Q. You calculated that on a 10 per cent?

MR. ORME: That is correct, sir.

Q. I wish we would use the same language in talking about this feed of gas. You have expressed it as 254,000 MMCF, that is the same thing as 254 billion cubic feet?

MR. ORME: That is correct.

Q. Now, in making that estimate you have not divided the totals between domestic firm industrial and interruptible. Can you give us any idea of the breakdown into those categories of that quantity?

MR. TIPPY: If I might answer that: in Mr. Orme's recent study, which is C19-4, the sales in Canada, excluding certain markets in which Trans-Canada is only a partial supplier, are summarized on Exhibit 6, and it is possible from that Exhibit 6 to compute the purchase of residential, commercial and industrial sales by years. I have done so for the first six years which includes the first full five years, and I would be glad to give you this, if you like. I can summarize them in about 1 percentage, really.

Q. Fine.

MR. TIPPY: Total industrial -- would you like it by years? A general summary?

Q. No, give us the summary.

MR. TIPPY: Total industrial, including

both firm and interruptible industrial, is 61 to 67 per cent, roughly two-thirds of the volume shown. Residential sales run from 25.9 per cent in the partial first year up to 31 per cent in the fifth full year. Commercial sales are 13.0 per cent in that first partial year, 1957-58, and afterwards, start in at 6.1 per cent running down to 5.9 per cent in the fifth full year. A portion of this can be looked at another way in the thinking of our group having to do with firm, which included residential and commercial industrial as opposed to interruptible, approximately two-third of the sales of these first five years and continuing on down. Now, it remains much the same on the basis of firm sales and about one-third of the annual volumes are sold on an interruptible basis.

Q. Now, Mr. Orme, may I ask you: having regard to the percentage figures that Mr. Tippy just gave us, are those percentages of anticipated industrial sales based for the next five or six years on firm contracts signed by the distributors with business?

MR. ORME: In some instances, yes, sir. Generally speaking, they are not yet signed but are in process of negotiation.

Q. In process of negotiation?

MR. ORME: Yes.

Q. Can you give us any idea of what

percentage of this estimate is represented by signed contract?

MR. ORME: No, sir. I can give you some approximation.

Q. That is all I am asking for; I am not asking for it exactly.

MR. ORME: It will take some addition. I wonder if I could do that for you at the break?

Q. All right. Now, could you tell me this, Mr. Orme: what estimates of industrial sales, approximately what percentage is west of Winnipeg including Winnipeg, and how much is east of Winnipeg?

MR. ORME: I would say it would be approximately 85 per cent to 90 per cent is east of Winnipeg.

Q. And can you tell us, of that 85 per cent to 90 per cent east of Winnipeg roughly the breakdown between the Provinces of Quebec and Ontario?

MR. ORME: Could I supply that after the break, also?

Q. All right. Now, the other thing I would like to know is, of the Ontario breakdown how much of it is in the area north of Barrie and how much is in the area south of Barrie? Now, finally, in these interruptible figures you have here for industrial purposes, is there any amount allowed for gas going through Niagara to New York?

MR. ORME: No, sir, there is not.

Q. Well now, will you explain to me, Mr.

Orme, the factors that you use in making this estimate of domestic sales? What percentage, approximately, was presently under contract; how much was estimated, and the factors you used in making the estimate?

MR. ORME: The part that is bothering me about the question is, how much is under contract; I would have to add that up if you mean it as between customers and Trans-Canada. As far as the distribution companies themselves are concerned, they do not have contracts.

Q. No, I am really talking of distributors and the amount that you are estimating for domestic requirements: how much has the distributor contracts for, and how much is pure estimate?

MR. ORME: I would have to add that up.

Q. I see. Well, can you tell me this: what factors do you employ in arriving at this total estimate of residential sales?

MR. ORME: The factors vary as between the markets and various things shown on Exhibit 5. Generally speaking, I would say that, taking residential, a base used in calculating the heating run in the year for new towns, 20 to 22 MCF per year. In consumer areas where they now have an average of 20 to 22, that was trended up to 25 to 26 MCF per year. In the Quebec natural markets where they are presently at approximately 12 MCF, they were

trended up to something a little over 20 at the end of the fifth year. In the newer markets not now served with gas, speaking specifically with reference to those in the Northern Ontario section and north of Toronto, between Toronto and Montreal, the factors of average residential gas is approximately 25 MCF per year.

Q. Now, in employing these factors, Mr. Orme, were you using your experience and the development trends in cities and States in the United States?

MR. ORME: That, together with the experience of both consumers, Natural Gas Company and Union Gas Company.

Q. And would those areas on which you have relied to build up these trends, would they have other sources of energy available to them, such as oil, coal and electric power, as we have in certain parts of Canada which Trans-Canada is serving?

MR. ORME: Yes, sir.

Q. In order to get these trends and place any reliability on them, must the competitive price of gas, as opposed to oil and electricity, be in the order as shown in the exhibit we were discussing the other day produced by Mr. Tippy?

MR. ORME: Within those ranges.

Q. So that, in order for your trends

to be reliable, gas must be able to be sold at something under the competitive price of other fuels?

MR. ORME: That would be particularly with respect to the interruptible industrial gas, and with respect to the industrial firm because, of course, there are some uses for gas that have advantages over the price advantage; and generally speaking, in residential and commercial heating fields, gas can be sold at some little or nominal price in excess of the competitor fuel. Mr. Tippy has already pointed out that when the price gets very great it has a very definite effect on industrials and the residential fuel, non-heating field, and price is not really controlling there.

MR. TIPPY: Mr. Pattillo, if I might add something to that: I think reference to Chart I in my Exhibit C19-3 would assist in explaining what Mr. Orme said about the relationship between the price of fuel oil and gas -- we discussed that on Friday, I believe.

Q. This is the first chart?

MR. TIPPY: Chart I.

Q. Now, will you explain these various charts to me again. The top line is what?

MR. TIPPY: There is a light line at the top of the chart curving to the right and upward which embraces, as I recall, 80 per cent. That light

line and the lower light line embraces 80 per cent. As I recall, those points with heavier lines embrace 60 per cent, the text has the exact figure in it, the point gain. First they indicate points of expected results; for instance, if you would take the figure minus 20, which is the line just below the zero line, it is a figure that indicates that fuel oil retail prices minus average gas rate, cents per million B.T.U. The average gas rate in the same terms is minus 20¢; in other words, gas is more expensive than fuel oil. If you follow that along where it crosses the horizontal line, there is a figure of perhaps 2 1/2 per cent or 3 per cent saturation indicated, and if you carry it to the light line furthest to the right, that is the lower light line, you may have 43 per cent, which would indicate you could expect to achieve saturation as high as 43 per cent, and you will note there are a few points outside that are even higher but they are the odd ones; 43 per cent with good sales effort in a market where natural gas has been available for some time. In other words, the percentage of saturation may range from 3 to 43 per cent, say.

Q. As long as you continue to have the differentials in price?

MR. TIPPY: Yes, that would be the expectancy on that differential. Now, if gas and oil were equivalent on a B.T.U. basis you could

expect saturation to go up to 50 per cent or 60 per cent. If gas was priced slightly below fuel oil you could expect 100 per cent saturation with the passage of time, because it takes time to sell these jobs and have these installations in operation.

THE CHAIRMAN: Did I understand you to say that if you had a price differential, gas below fuel oil, that you would, in course of time, get 100 per cent saturation?

MR. TIPPY: That has been the experience in many parts of the United States where they have had it for a period of time. Time is the other element that comes into the picture.

THE CHAIRMAN: You mean, the customer will buy gas for heat when there is such a differential between gas heating and heating by fuel oil?

MR. TIPPY: This is differentiation in favour of gas we are looking at. This indicates that when gas is less expensive than oil, with the passage of time it is possible to have all of the customers of the company use gas for space heating.

THE CHAIRMAN: Less expensive? I understood the question the other way, or the answer, rather.

MR. TIPPY: I am very sorry.

THE CHAIRMAN: Perhaps it is my fault, but that is what provoked my question.

Q. Now, Mr. Tippy, in that exhibit you have there in front of you, in tabulation No. 3, you show where you have compared the various costs of the various fields, as you explained the last day. You show oil efficiency at 60 per cent. Where do you get that figure?

MR. TIPPY: These relative efficiencies are efficiencies that have become standard in the industry in the United States in making comparisons. For instance, under oil, we assume oil efficiency is 60 per cent on the average in the normal installation in the home; gas efficiency is 75 per cent on the average in the normal installation in the home.

Q. So, when these oil salesmen come around and tell me they can give me 75 per cent efficiency, they are really pulling my leg?

MR. TIPPY: This is on the average and is the result of studies that have been made. It is always possible, in new installations, at the start, to get higher efficiencies than you will average on the whole and, besides, many of these are older installations; they are not all brand new. In other words, the salesman could be right.

THE CHAIRMAN: I was wondering for whom you were working, Mr. Tippy?

MR. TIPPY: By the same token, Mr. Chairman, 75 per cent would be low for a gas installation.

THE CHAIRMAN: I was waiting for that.

Gentlemen, we will have a ten minute break.

---A short recess.

THE CHAIRMAN: Carry on, Mr. Pattillo.

BY MR. PATTILLO:

Q. Mr. Tippy, I am not sure whether this is your question or Mr. Orme's, or whether it is a combination of both, but, again, referring to the tabulation 3 which we were discussing just before the recess, where you show oil efficiency at 65 per cent and gas efficiency at 75 per cent and coal efficiency at 50 per cent, and you make the calculations you have made on the tabulation in the light of these efficiencies: am I not correct in thinking that if the oil efficiency and the gas efficiency were approximately the same, the prices you have shown there for gas would go up correspondingly?

MR. TIPPY: That is correct.

Q. And, am I correct in thinking, if the prices went up, then the projections that are shown as to the probable markets would reduce quite considerably?

MR. TIPPY: I believe it is the other way; it is the equivalent price of gas per dollar. It is an up-and-down thing and it is a little confusing. Mr. Pattillo, in the answer to your question I

should like to revise my answer. I got twisted around as to how the calculated equivalent cost per MCF would go. If the gas efficiency and the oil efficiency were brought to an equal figure, the figure of $1.37, for example, in Montreal would go to a lower equivalent figure. And if it went to a lower equivalent figure and if, in fact, that were the proper figure to take, it would mean that your competitive margin would be reduced or, if it went far enough, could be wiped out, of course.

Q. Now, I find that a little difficult to understand. If you have oil efficiency at 60 per cent with a price of 18.3¢ at Montreal, and you have gas efficiency at 75 per cent, with a price of $1.37 ---

MR. TIPPY: Sir, the $1.37 is the calculated equivalent cost on an efficiency factor. The figures are computed figures and it is at a price of 18.3 for relative efficiencies. If you change the efficiencies, it would change this efficiency equivalent cost and would reduce it.

THE CHAIRMAN: Frankly, sitting here I am completely lost as to what this table, tabulation 3, intends to convey. I wonder if Mr. Pattillo could go into an explanation of it, as to just what it means? Just to put a figure of 18.3¢ for an Imperial gallon of No. 2 fuel in Montreal means nothing to me, as one of the Commissioners, in relation

to the other figures on the tabulation.

MR. PATTILLO: Q. Let me try and develop that, Mr. Tippy.

As I understand it, from your evidence the other day, this 18.3¢ at Montreal for the price of fuel oil, in cents per Imperial gallon, is the actual price?

MR. TIPPY: At which it is sold to the householder.

Q. In Montreal?

MR. TIPPY: In Montreal.

Q. Assuming it has an oil efficiency of 60 per cent and gas has an efficiency of 75 per cent, then the calculated equivalent price to put gas on exactly the same basis is $1.37 per 1000 cubic feet.

MR. TIPPY: Absolutely.

Q. That is the reason for that, is it not?

MR. TIPPY: Yes, sir.

Q. Then you have shown the cost of coal in Montreal at $29.35.

MR. TIPPY: Yes, sir.

Q. Is that the equivalent price with oil or with gas, or is it the actual price?

MR. TIPPY: $29.35 per ton is the weighted average price per ton, according to the statistics we were able to get for December, in Montreal.

Q. And when you first produced that coal

efficiency of 50 per cent as opposed to gas efficiency of 75 per cent, a person burning coal is paying \$1.67 to get the same result as they would get from gas at \$1.37?

MR. TIPPY: No, sir, he is paying the equivalent of gas at \$1.67. In other words, \$1.67 gas would be equivalent to using these efficiencies we have down here, in the case of fuel alone, to the cost of using coal when coal costs \$29.35.

THE CHAIRMAN: In other words, put on the same basis, a householder could afford to pay \$1.67 for natural gas?

MR. TIPPY: Yes, sir.

THE CHAIRMAN: If he is paying \$29.35 for a ton of anthracite coal.

MR. TIPPY: That is right.

MR. PATTILLO: Q. What I do not understand, if I have an oil efficiency of only 60 per cent and I am paying 18.3¢, why, if the gas efficiency is no greater than the oil, that \$1.37 does not go down?

MR. TIPPY: It does go down, sir; it would go down to, approximately, \$1.19, according to my slide rule.

Q. That is exactly what I want to get: \$1.19. So, if I am a householder in Montreal and the efficiency of oil and gas is the same, having regard to the present price of fuel oil in Montreal,

I cannot afford to pay any more than $1.19 per MCF without paying something extra for gas, without considering cleanliness and all that sort of thing.

MR. TIPPY: Purely on the price of fuel alone, your conclusion is correct.

Q. Again, may I suggest this: that that factor would make a substantial reduction in the anticipated market demand.

Q. Well, sir, these efficiencies and these markets have been assumed on the basis of experience; if experience should prove to be incorrect, there is weight in what you say. I think that our market estimates are based, in terms of the fact that oil is 18.3¢ per Imperial gallon. If that price should change, we would have to reconsider the relationship between the price of oil and the markets for gas, having in mind the rates proposed to be charged for the gas. But as to the arguments between efficiencies, as to whether it is equal or different, that is the argument made by the salesman for both the oil company and the gas company at the time it goes in; at the time the sale is made, and there is room for argument, as there always is, in selling a product. However, I think the basic fact of the 18.3¢, in our experience, leads us to believe that the markets as set forth can be attained.

Q. Mr. Tippy, may I put this question to

you: the Canadian Petroleum Association, in their brief, has suggested that it might be quite possible that the ultimate reserves of gas in Alberta were in the order of 300 trillion.

MR. TIPPY: Was that in Alberta, sir, or the Valley?

Q. Let us say the whole basin. The evidence is, at the present time, that proven and probable is just something over 20. Now, whether or not there are 300 trillion cubic feet available here is certainly problematical, is it not?

MR. TIPPY: That is correct.

Q. And whether or not this market exists in the east, as projected by Mr. Orme, is equally problematical?

MR. TIPPY: The main element there is whether the population of Canada will continue to grow as the earlier indications and as estimated.

Q. And whether or not competitive factors, as to the prices, remain the same?

MR. TIPPY: That is right, and whether it can be attached. That is right.

Q. Do you agree that in a country as large as Canada, which has water power, oil and gas and coal as sources of energy, that it would not be in the interests of Canada for one to become a monopoly over the others?

MR. TIPPY: I think that is correct.

If I may elaborate just a little: the only way one could become a monopoly over the others would be through some kind of government regulation which, I do not believe, is even contemplated by anyone here in Canada. The element of competition will determine where the market goes. There is a strong demand on the part of householders everywhere in the North America Continent, at least north of the Rio Grande, for gas for space heating. It has features the public wants; for example, down in the State of Michigan one company that serves a portion of that State has a backlog of requests for gas for space heating, at the present time, of 150,000 customers and the building of gas pipelines has not been sufficiently rapid to meet the market. The question of whether a similar situation will develop in Canada as gas becomes more accepted, is problematical. But the trend is certainly there and the public wants it. I think the question will be a balancing of a number of very important factors, one of which is the desire of the individual, who is the ultimate consumer of this gas, for space heating. So far as electric competition is concerned, I think there will be less competition for electric heating in Canada than in almost any place on the continent. It is a point of economics. As far as oil is concerned, it will be a question of how the price structures develop as between oil and gas. The desire,

as I have said, on the part of the public is for gas, even at a premium over oil. Oil is a more flexible product and the experience has been, in the United States, at least, that the operators of refineries seek as a remunerative, as much of an end product as they can get, and there have been increasing percentages of approved change in gasoline and such higher prices for transportation fuels, and the moving of the residual product. I think transportation has been the big market that oil has sought.

However, I must say that competition has been present, certainly, at all times in house heating, but never of the disastrous type, or has serious price-cutting taken place. This is, largely, because there were other markets, I believe, which oil sought to fill.

As far as coal is concerned, the ultimate consumer, where he can get either gas or oil, will take them in preference to coal almost regardless of price. Of course, if it gets too extreme the difference will put it beyond the reach of the poor families in the area, but there is no correlation as between whether the householder will choose oil or gas--there is no such correlation between coal, but the only thing that would make them use coal would be some kind of government edict, and I do not think that is even being considered.

[illegible]

Q. May I ask this question: if Mr. Orme's forecast came true, what percentage of the market presently being supplied by oil and coal would be diverted to gas?

MR. TIPPY: I do not think I can give you ---

Q. An approximation?

MR. TIPPY: --- a basic figure, but I would point out one thing at the start: that is, that much of the increase of the market, as is shown by Mr. Orme's forecast, relates to new dwellings being built and to new houses as the country grows. It would be expected, if gas is available in the east at reasonable prices, virtually all of that market, maybe 90 percent or some such thing, would turn to gas if it were available. As to the presently served markets for coal, the residential market for coal would be expected to be displaced fairly rapidly at the end of five years. I would think a good percentage of the present coal installation would convert to gas where the people are able to afford the rather modest cost of equipment to change to burn gas. With regard to those homes that are now served with oil, particularly those with recent oil heating installations, our thinking, and I am sure Mr. Orme's thinking is the same, that you would not replace that oil use until such time as the customer had to come to a buying decision to

replace his present heating plant with another oil-fired plant or gas-fired plant. Assuming a life of 10, 12 years or so for an oil-fired installation, after that period we would expect to get a fair percentage, at least, of those replacements after the 10 or 12-year life installation. We think the replacement would be to gas and I believe Mr. Orme's study reflects that type of thinking.

Q. Then is it, just to sum up, your figures contemplate, so far as domestic use is concerned, the complete displacement of coal in, approximately 5 years, and 50 per cent displacement of oil in the lifetime of this contract?

MR. TIPPY: As far as the displacement of coal, I think virtually complete is correct. As far as the displacement of oil is concerned, over a period of time we expect to get the saturation shown, which you will note on Mr. Orme's exhibit, that is Exhibit 8, which shows that we are expecting in the 30th year or 31st year -- the last years, at any rate -- that as customers the gas companies will have just under 70 per cent of the dwelling units in the area. Now, the remaining 30 per cent will, of course, have to use other fuels because they would not be customers of the gas companies at all. Then, of the 70 per cent of residential customers of the gas companies, 74 per cent of those will use gas for heating. This works out to 51.8 per

cent or a little over half of the dwelling units in the service area using gas for heating at the end of 30 years, which is quite a ways from a monopoly of market.

Q. Now, are these figures as to interruptible sales to industry in any way dependent on the ability of the company to sell interruptible gas through Niagara to the United States?

MR. TIPPY: They are not reflected in Mr. Orme's exhibit at all, no, sir.

Q. I appreciate the sales to the United States are not reflected but I am talking about the ability to sell interruptible gas at a price that will enable it to be sold. Is it in any way dependent upon the company's ability to sell gas through Niagara to the United States?

MR. TIPPY: My answer to that would be no, sir, and I would like, if you would care for me to do so, to tell you what I see in the Niagara sale.

The right to sell gas on a completely interruptible basis to Tennessee Gas Transmission Company at Niagara is, as I visualize it, something of an insurance factor, a plus factor. What it means, to me, is that on certain days like the Queen's birthday or days when industry is shut down and the use of gas is at a minimum, or when some major industry which uses gas might be out on strike, there would be capacity available for the short time in the pipe line which could be sold profitably at Niagara on an interruptible basis and under the contract as proposed.

Whether there would be, in fact, any volumes at all in other areas is somewhat problematical. I think there might be odd days and weekend volumes which would not be substantial. Whether or not that sale is made is not the key to whether Trans-Canada becomes successful and, while it is a good plus and a strong one, that is about as far as I can see we should go with it.

Q. Doesn't that possibility of keeping your line filled by this sale to Niagara enable you to offer to the Canadian buyer of interruptible gas a better price than you would be able to offer if you were not able to keep your line filled with that possible sale?

MR. TIPPY: I think not, sir. It is such a small factor it is not even being considered in these figures.

There is lots of flexibility in the eastern market other than your underground storage facilities of Union Gas, and that helps.

Q. If you do not have this Niagara business, then you have got to have storage near your capacity markets, don't you?

MR. TIPPY: It doesn't relate to interruptible markets, sir, but it is always desirable for a pipe line to have available to it or its customers underground storage.

There is a lot of flexibility in serving

of a firm market which underground storage can give.

Q. The only underground storage that I know anything about in Eastern Canada is owned by Union.

MR. TIPPY: That is substantially correct, sir.

Q. And the company has not any contract with Union for it, does it?

MR. TIPPY: Indirectly it does, sir, in that the contract between Trans-Canada and Union makes virtually full use of the storage facilities of Union. The contract calls for the bulk of the annual volume to be delivered to Union in the summer time in varying daily amounts which are within the control of Trans-Canada up to a maximum limit. It provides for a maximum average daily amount to be delivered by Trans-Canada to Union in the winter period and, further, provides that on any day when Trans-Canada requires it for other markets, the deliveries to Union can be reduced to zero.

In other words, the flexibility of storage is fully in the contract between Trans-Canada and Union, and Union offers storage, in effect, for the benefit not only of their own market but to the real benefit of the whole line.

Q. Would you agree with me that if you were going to offer to supply the markets as anticipated in Mr. Orme's exhibits that you would have to have

further facilities than that now available through Union?

MR. TIPPY: Sir, that is certainly one alternative. The other alternative, the one Mr. Orme has assumed, is that we would have the full use of Union's fields, as contemplated in these figures; but we would still be able to operate the line on the original sized load factor throughout the entire 30-year period based in relationship to the elements in the market without further storage.

Q. Mr. Coates, I would like to ask you this question:

This increase in the potential market of Trans-Canada, as president of the company do you consider that this should or should not be built up at the expense of the producer?

MR. COATES: If you mean by "built up at the expense of the producer," Mr. Pattillo, by reserving in the ground proved gas, I would say no, I don't think that is a proper way it should be done.

If you are talking about at the expense of the producer as to the price paid for purchase gas, we fully expect to be competitive with others who would be buying.

Q. I have in front of me an address by Mr. A. P. Craig, who is the vice-president of

the company in charge of sales ---

MR. COATES: Yes, sir.

Q. --- which he gave to the 32nd Canadian Purchasing Conference at the Royal York Hotel in Toronto on October 4th last year, and I am reading from page 15, where Mr. Craig said:

"It is no secret among the gas producers "that we are in the market for more gas. Neither "is it any secret that we are not going to pay "prices for this additional gas that may jeopar- "dize any position of the eastern distributor "with reference to the price of competitive "fuels."

Now, was that statement of Mr. Craig's made as representing company policy or was it his own personal view?

MR. COATES: It is his own personal view, sir. I think that can be taken in two ways. It can be taken in at least two ways.

Q. Well, I will give you my interpretation of it first and you can give me yours if you do not agree with mine. I construe that as meaning that at all times the company is going to keep the eastern distributor competitive with oil and coal and, therefore, there is a top ceiling as to what can be paid by the distributor at the end of the line.

Now, is that right?

MR. COATES: I think that is correct, sir. I think that is the position we found ourselves in whether Mr. Craig said it or not, that we must be competitive with other fuels if we intend to develop additional markets.

Q. That is, if you intend to try and get all of this market or of these markets which Mr. Orme wants you to do?

MR. COATES: Well, we didn't know about Mr. Orme's markets at the time this was said. We do expect and hope to get as much of the market as Mr. Orme has spoken of as we can, because we feel it is a conservative market estimate and, if the market wants the gas, we propose to make every effort to deliver it to them.

Q. But you don't think that the whole burden of keeping this price to the distributor competitive should fall on the producer?

MR. COATES: No, sir, I don't think it should fall on the producer. I think it is necessary that we are able to purchase gas that we can transport to the markets and sell competitively and, if we cannot do that, the producer does not have to sell us gas.

I would like to say one thing further in that regard: if there is any feeling that we expect to have any sort of protection from governmental bodies to force the producer to sell his gas for less, then that is a mistaken idea, because we certainly do not

expect to do that. We only expect to survive if we can be competitive.

Q. Would you just answer another thing: you heard Mr. Stewart explain the stage method this morning where you cut in at different years with additional quantities?

MR. COATES: Yes, sir.

Q. From your experience in the gas business and gas transmission business, is that, in your opinion, the proper way to do it?

MR. COATES: Yes, sir, that is the proper way to do it. It is the way that we in Trans-Canada think it should be done and certainly you have to depend a great deal on trend of development if you are going to support a pipe line in an area, whether it be from Alberta to Eastern Canada or from Texas to New York; you have got to look as far as you can into the future to determine whether or not it is a good risk to spend the amounts of money which are necessary to build transmission facilities, gambling somewhat on the fact that there will be continued development.

The only time we feel it is necessary to be tied up at any particular time is in the gas that is necessary to have under contract for financing purposes.

Q. That is just what I was going to come to. On the basis of what Mr. Orme forecasts for

the next five years in his exhibit, and where Mr. Stewart says that for Canada alone it will require, if you assume the flattening out after the end of the fifth year, an additional 2.5 trillion, you do not contemplate that the producers in Alberta should be required to set aside that 2.5 trillion for your purposes right at this moment?

MR. COATES: No, sir, we do not. We contemplate that we are able to purchase on the basis on which the figures were broken down further as to two stages in the next five-year period; that is, 1.2 trillion before November of 1959 and 1.3 trillion additionally before November of 1961.

Q. So that ---

MR. COATES: So that we would hope and expect, if there is any possible way to do it, to purchase 1.2 trillion feet of additional gas under a 25-year contract, to obtain the necessary permission to remove that from Alberta and use that in financing the facilities necessary to move that 1.2 trillion to market as the market takes it.

Q. So you would say that this Commission, inquiring into the advisability of permitting the export of gas from Canada, should and could properly take into consideration the trend of development that has occurred within the province and could assume that that trend of development is probably going to continue and that it is going to

be adequate to take care of your future requirements as projected here?

MR. COATES: Yes, sir, I think that is a fair statement. I think it is essential that you give consideration to trend. I cannot conceive of an attitude, if I might say so, of saying to the producer that he must develop and hold in readiness always, for a 30-year period, a supply of gas that may or may not actually be attached. I think, in order to encourage development, the market needs to depend on the trend of development to satisfy it.

Q. Thank you, Mr. Coates; that is all I want to ask you, at the moment.

Now, Mr. Tippy, I would like to have you explain, for a moment, if you will, the rate structure of the company, this business of zone rates and how the question of zoning rates is affected by individual negotiations.

MR. TIPPY: Mr. Pattillo, I believe Mr. Orme has been much more close to these matters of the rates of Trans-Canada than I and, with your permission, I would like to have him respond.

MR. ORME: Would you repeat the question, please?

Q. I would like you to explain the rate structure of Trans-Canada which, I understand, is built up on a zone basis; but I would also like you to explain, in a comment which I think you made

the other day, as to the sales of industrial gas as a result of individual negotiations, and I do not understand how that fits into the zone structure picture.

MR. ORME: Well, the individual negotiation that I was referring to was the individual negotiation by the distributing companies with a particular customer. In so far as Trans-Canada rates are concerned, it has two or three rates for gas which would be bought and sold by a distributing company on an interruptible basis.

The lowest of those rates is what is called the access rate, access cost rate, which has no guarantee of service at any time. In other words, it is the lowest priority gas,on an if-as-and-when-available basis.

Then the company also offers -- and this is true with respect to all of its rate zones -- off-peak rates, which are firm during the summer periods for which the gas is available for delivery. There are two or three of those, six months firm,seven or eight months firm and nine months firm, and, as the period of the firm obligation becomes greater, of course the price becomes greater also.

The company's rate structure is what is known as a zone rate structure as opposed to an over-all system single rate. The level of the zone rates in the various zones reflects the elements of miles

of haul and weighted average distribution of demands, as well as the annual quantities. In other words, it does give effect to all of the factors which do affect cost of delivery of gas.

Q. Would you explain how these zones are set up and the theory of the zone rating as opposed to individual rates for individual distributors along the line?

MR. ORME: The Trans-Canada system is divided, for rate purposes, into the following zones:

There is the Saskatchewan zone, which covers all of the Province of Saskatchewan as traversed by the Trans-Canada pipe line. Then there is the Manitoba rate zone, which covers all of the Province of Manitoba which the Trans-Canada pipe line crosses.

Then there are two other zones along the pipe line, coming easterly from Manitoba, the first of which is the so-called northern zone, which, of course -- pardon me, the western zone, rather, which extends from the Manitoba border to a point approximately five miles east of the Town of Geraldton. Then there is the northern zone, which extends from the end of the western zone along the company's line to just south of North Bay, at which point the company's central zone commences.

The central zone includes all of the 30-inch main line down to the Toronto Junction, along the

24-inch line from Toronto Junction to Sheridan Junction and along the Niagara Gas Transmission line to Niagara Falls, to the border.

The central zone also includes the 20-inch line from Toronto Junction going towards Montreal, up to a point approximately five miles east or northeast of Bowmanville, Ontario, and at that point the company's eastern zone commences and includes all of the rest of the portion of the Province of Ontario served by the Toronto-Montreal 20-inch and also includes the present contract of Trans-Canada with Quebec Natural Gas Corporation at Montreal Island.

Ottawa is also served by a lateral which is also included in the eastern zone.

Q. Now, just take the eastern zone, to illustrate. As I understand it, it begins just beyond Bowmanville?

MR. ORME: That is correct.

Q. And runs through all the way, as far as your last distributor is concerned?

MR. ORME: Yes.

Q. And that is a distance of some hundreds of miles?

MR. ORME: I would think it would be something in excess of 200 miles.

Q. Does the same rate prevail in the whole of the zone? For instance, can a person in Kingston, which is about 100-odd miles to the west

of Montreal, is he paying the same cost, is a distributor there paying the same cost as the distributor at the City of Montreal?

MR. ORME: That is correct, sir.

Q. How is that figured out and would you explain that weighted average and all the rest of it? Why is there no differential when you have that much further to haul it?

MR. ORME: Well, you cannot have, from a practical operating standpoint, a separate rate for each individual customer. That has been found, by experience, in the States. We did used to have that originally when we had our first natural gas pipe lines that were built in the United States and that was before any federal regulation. We did have differentials as between towns, which was a cause of considerable argument between the pipe line and its customers, wherein one town would claim that another town had an unfair advantage over it in the way of cost of gas and so forth, so the trend has been to fix rates by zones or a group of distributing companies rather than as between individual customers. That practice has been followed also by the Federal Power Commission in its federal regulation.

Q. Now, will you explain to me, for instance, Bowmanville is so many miles from the Saskatchewan gate, and you transport your gas so

many miles to get it there. When you are determining your zone price, do you figure on that mileage and stop there, or do you take the mileage that is included from Bowmanville to Montreal, which is the end of the zone, and take that into the picture?

MR. ORME: No, sir. Rather than either the beginning of the zone or the end of the zone, rather than either of those, what is taken into consideration is the medial mile, representing the best estimate as to what the weighted average mile haul will be within a mileage zone.

Q. And that is what you mean by these weighted averages all the way through?

MR. ORME: That is correct.

Q. So when we come to consider, as we are going to in a few minutes, the Emerson contract, when you are determining the cost of the Emerson contract, you would weight right through to Montreal all the Canadian sales and weight the Emerson contract merely from the Saskatchewan gate to Emerson and compare the two, is that what you do?

MR. ORME: Not exactly. If I may explain, Mr. Pattillo:

In allocating an over-all system cost of service as between the Canadian sales and the sales at Emerson, what we have done, we have classified the system costs of service as between demand costs and commodity costs following a classification

that the Federal Power Commission approves and then allocating those demand costs between the Canadian sales and the Emerson sales on the basis of the respective ratios of their demand miles, which is arrived at by taking the demand at each individual delivery point and multiplying it by the demand at this point to come out to the total demand mile for the system.

Then the demand costs of the system are allocated as between Canadian sales and Emerson sales on the basis of their respective ratios of demand miles.

Likewise, the commodity costs are similarly allocated as between Canadian sales and the Emerson sales on the basis of the ratio of their respective annual miles or commodity miles, as we call them, to the total system over-all commodity miles.

Then the two allocated costs, demand and commodity, are added together to arrive at the final cost, the total cost of service to Canadian sales and the total cost of service to Emerson sales.

Q. Is the result of that calculation this, Mr. Orme, that all of the sales made in Canada east of Winnipeg help to reduce the cost in the company's calculations of putting the gas into Emerson?

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

MR. ORME: No, sir, the reverse of that is true, that according to the exhibits which we have prepared, the effect of the Emerson sales is to reduce the over-all unit system cost of service below what they would otherwise be without the sales.

Q. Now, then, is the real reason for that the fact that under the agreement with the Federal Government the portion of the line that is owned by the Government is rented to the company for a rental based on the sales east of Winnipeg and bear no relation to the sales to Winnipeg or west of it?

MR. ORME: I think the answer to that is yes and no, Mr. Pattillo.

In so far as the rental on the Crown Corporation section, of course it is based entirely on throughput of gas or gas sold east of the Crown section or that is sold along the Crown section, so that rental would not be paid on any gas sold by Trans-Canada to Emerson, because that gas would not go through the Crown Corporation.

However, in the allocation to total system cost of service I was referring to, which we have prepared, those Crown rentals were taken into consideration as one of the total system costs of service, just like operation, maintenance, depreciation and return and were allocated to all

sales, including the sales at Emerson, even though such sales would not use that portion of the pipe line.

MR. PATTILLO: I think this might be a good point to adjourn, Mr. Chairman, and after lunch I propose to have Mr. Orme put in his exhibits, and the two matters I wish to deal with after lunch are the Government contract and the Emerson contract.

MR. TIPPY: May I be permitted to correct some earlier figures which I gave?

On Friday I was looking through some working papers to get you the equivalent cost of space heating for space heating installations in several towns in Canada. The figures I gave you, in one instance, were slightly incorrect, based on an incorrect computation; and, in another instance, they included not only the cost for heating but also the cost of equipment and water heating as well.

I have the proper figures which I can now give, if you would like to have them now.

MR. PATTILLO: Well, we will read them in right after luncheon.

MR. TIPPY: Very good.

---Whereupon the hearing adjourned, at 12.19 p.m., until 2.00 p.m.

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---On resuming at 2:00 p.m.

THE CHAIRMAN: The Commission will now resume its hearing.

Mr. Pattillo?

MR. PATTILLO: Thank you, Mr. Chairman.

Q. Mr. Tippy, before we resume this afternoon, there were a number of questions that I asked this morning, particularly before the morning break, on which you wanted to do some calculations, and I wish you would put the result of your calculations on the record.

MR. TIPPY: You asked, as I recall, one question as to the industrial gas in this line; what percentages there were in various areas and taking the year 1962-63, which is the last of the 5-year period, the percentage of industrial gas in annual volumes west of Winnipeg works out to 4 1/2 per cent, and of the 95 per cent east of Winnipeg, your next question was: what percentage of that gas goes to Quebec and what percentage goes to Ontario. The gas east of Winnipeg, 26.7 per cent goes to Quebec, and 73.3 per cent goes to Ontario. Now, of the gas that goes to Ontario you further asked what proportion went to markets north of Barrie and what proportion to markets south of Barrie. Markets north of Barrie, I understand, it is the Northern Ontario Industrial Gas Company; 31.2 per cent of the

gas to Ontario goes north of Barrie and 68.8 per cent of the gas to the Ontario markets south of Barrie.

Q. Thank you. Now, just before adjournment, just before lunch you were wanting to read in something. Would you do that now?

MR. TIPPY: I have a very brief tabulation of two columns of figures: the general heading is "Central Space Heating Installations, Gas Only." The two columns are headed: "With General Service Sales" and "Without General Service Sales". I have three lines in the tabulation: the first is Winnipeg, 85¢ -- $1.13. The next line is Toronto, $1.15 -- $1.44. The next line is Montreal, $1.28 -- $1.41.

Those replace the figures that I gave you from working papers on Friday.

Q. Thank you. Now, I would like to ask some questions regarding the portion of the pipeline owned by the Crown.

MR. McNEILL: Since you are going on to a new subject, Mr. Pattillo, I wonder if this would be an appropriate point on the record simply to clear up two small matters concerning the evidence of Mr. Stewart and Mr. Horte on Friday afternoon? Various questions were asked and answers given. I think it became apparent there was some misunderstanding as to what was sought and the tabulations

we have filed this morning were to clear up the answers and the information on the ground that was covered at that time. I assume it can be taken that the tabulations we entered this morning will serve as a correction of the transcript as it appeared on Friday.

Q. That will be correct.

MR. McNEILL: The second thing, sir, on Friday one of the things you asked Mr. Horte and Mr. Stewart to produce was a tabulation in percentages of the types of gas we have under contract; that is, associated gas and so on. If you want to put it in at this time ---

Q. Yes.

MR. McNEILL: --- it is available, and was available this morning.

Q. Thank you. I would like to have that.

MR. HORTE: Of the reserves under contract, the calculations show 34.8 per cent of those gas reserves are classified associated gas reserves; reserves in association with oil reserves leaving non-associated gas of 65.2 per cent. You asked in connection with what percentage of the reserves under contract to Trans-Canada would require processing for the removing of hydrogen sulphide or ore condensate. A study of this indicates 36.6 per cent of the reserves under contract to Trans-Canada contain hydrogen sulphide and/or condensate. 63.4

per cent of the reserves could be classified as dry gas reserves. That is all I have as an explanation for those two questions.

Q. Thank you. Have you something else, Mr. McNeill?

MR. McNEILL: I do not want to interrupt you; I know you have a plan, but if you are leaving markets, there was one further study which Mr. Tippy prepared. It is a comparison per capita of Canadian natural gas as between Alberta and the remainder of Canada as the latter is reflected by Mr. Orme's study, and we would like to tender that at this point in the record.

Q. That is the graph 359/61 titled "Annual Per Capita Consumption MCF."?

MR. McNEILL: That 359/61 is simply the key number of the type of paper it was drawn on and has nothing to do with the witness' study, which is a comparison per capita of Canadian industrial gas requirements.

Q. May I have that marked? I think this becomes C-24-6.

---EXHIBIT NO. C-24-6: Comparison per capita of Canadian industrial gas requirements.

Q. And the object of this graph is to show that Alberta, which has been using gas as a source of energy for many more years than the rest

of Canada, has a higher per capita consumption than you are projecting for Eastern Canada?

MR. TIPPY: That is correct, and that will be a continuation.

Q. Is there anything else, Mr. McNeill?

MR. McNEILL: Not at this point, sir.

MR. PATTILLO: Q. Now, who is going to tell us about this contract with the Government? You, Mr. Coates?

MR. COATES: Yes, sir, I think I should, perhaps.

Q. As I understand it, according to the volume which you have filed with us, headed "Contracts other than Gas Sales Contracts", the original agreement between Her Majesty the Queen in the Right of Canada and the Trans-Canada Company was dated the 21st day of November, 1955?

MR. COATES: That is correct, sir.

Q. And that is just approximately the same time that we have Tennessee Gas Transmission getting into the scheme?

MR. COATES: Yes, sir, I believe November 1st was the date that they -- the first time it was in as an interested party.

Q. How long before the 21st day of November, 1955, had you reached an oral agreement with the Government that the Government would enter into this agreement?

MR. COATES: Sir, I don't recall the exact time but it was some several weeks prior to this.

Q. Would it be fair to say that when Tennessee agreed to come in, they knew that the Government was going to build a portion of the line?

MR. COATES: Yes, sir, I think that is fair. I just can't recall dates.

Q. And notwithstanding that, for a mere guarantee of pipe, Tennessee got everything that we have heard they got?

MR. COATES: Yes, sir.

Q. Now, would you please tell us about this agreement and what the essential terms are?

MR. COATES: The essential terms are that the ---

MR. McNEILL: Mr. Pattillo, you realize that this agreement as filed has had numerous amendments and supplements to it? Now, as Mr. Coates goes through, do you want it as it is or as it developed?

MR. PATTILLO: As it developed.

Q. We will take the first original agreement and then go to each supplement so we will bring it up to date.

MR. COATES: The first and one of the very essential features of the contract was that the Government of Canada indicated its willingness to construct 675 miles of 30-inch high pressure gas pipe line extending from the Manitoba-Ontario border, running along the Trans-Canada highway to Port Arthur and Fort William and thence north along Highway No. 11 to a point near Kapuskasing, Ontario, and the pipe line was built on the design as laid down by Trans-Canada so that it would fit in with the remaining portions of line that were adjacent to it

on each side; it would fit in in so far as the operations of such a system were concerned and would be one integrated pipe line as a result.

The pipe line was to be built so that it would transport not less than 300 million cubic feet of gas per day. It was necessary that Trans-Canada be able to demonstrate that it had constructed or would construct the sections of line that joined with the Crown section and that the pipe line of the Trans-Canada system as permitted by the Board of Transport Commissioners would be carried out.

Now, there was an estimated cost in the original arrangement wherein it was estimated that the project, as designed, would cost $117,633,000.

Q. After the line was completed by the Crown Corporation, what were the proposals; what was to be the operation?

MR. COATES: Sir, do you mean how the pipe line was to operate?

Q. No, what I mean was: title to the line, when it was complete, was to remain in whom?

MR. COATES: Was to remain in the Northern Ontario Pipe Line Crown Corporation.

Q. And who was to lease it?

MR. COATES: Trans-Canada Pipe Lines Limited was to lease it.

Q. For a period of how long?

MR. COATES: For a period of 25 years.

Q. What was the rental to be? I think you will find that ---

MR. COATES: Yes, I can find it, sir, but I was glancing over it quickly to refresh my memory.

The lessee will, at its own cost and expense, operate and maintain the said line, pay all municipal taxes and assessments, pay to the Crown Corporation a monthly rental equal to the number of Mcf of natural gas actually transmitted by the Northern Ontario section in the preceding month, multiplied by the transportation cost per Mcf as hereinafter provided.

Q. And what was that transportation cost?

MR. COATES: That transportation cost will be the amount per Mcf if the line was operated for one year at two-thirds of the initiallly designed capacity. That is two-thirds of the 300 million.

Would yield an amount in that year equal to 4½ per cent of the capital cost to the Crown Corporation on the Northern Ontario section.

Q. And what did that work out to, in cents per Mcf?

MR. COATES: Well, there was another item, too ---

Q. All right.

MR. COATES: --- that needs to come in before we get to the cents per Mcf.

Q. Right.

MR. COATES: Depreciation at $3\frac{1}{2}$ per cent at the cost of its depreciable assets.

Q. That was to commence when?

MR. COATES: I believe I had better read that:

"Commencing in the fourth full calendar "year of the term of the lease and for each "calendar year thereafter, to pay to the Crown "Corporation, by way of an additional rental, "the amount by which, in said calendar year, "the revenues of Trans-Canada exceed its "operating expenses, including its cost of "operating and maintaining the Northern Ontario "section as required under the terms of this "agreement.

"Interest on bonds, debentures and other "outstanding debts and obligations and depre- "ciation at $3\frac{1}{2}$ per cent of the cost of its "depreciable assets. Such additional rental "not to exceed, in any event, one per cent of "the said capital cost of the Northern Ontario "section and to be payable only to the extent "necessary to bring the accumulated total of "revenue payments under subparagraphs 3 and 4

"to an amount equal to 7 per cent per annum of
"the total capital cost from time to time in the
"Northern Ontario section, together with interest
"accumulated at $3\frac{1}{2}$ per cent per annum, compounded
"annually, on the net deficiencies below 7 per
"cent per annum on any preceding period."

Q. Now, did that mean, in effect, that the maximum that you could be required to pay was that amount which would yield to the Government 7 per cent on its capital investment?

MR. COATES: Yes, sir.

Q. Plus interest at the rate of $3\frac{1}{2}$ per cent on any deficiency in any one year on that amount?

MR. COATES: Yes, sir, that was the way the Mcf throughput was arrived at.

Q. Now, can you give us, at that point, what you people calculated that was going to cost you per Mcf?

MR. COATES: It is 7.2 cents per Mcf of the original cost, and, of course, if the pipe line facility is used to transport more than the 300 million feet per day, the 7.2 cents still holds, so if we go to 500 million per day and pay 7.2 cents, it would be something in excess of a straight 7 per cent on the original cost.

Q. Was there any agreement in the original document whereby the company could purchase this line?

MR. COATES: Yes, sir, the company and the Crown agreed that Trans-Canada could purchase the facility at any time from the date of the lease during the 25-year rental period at the depreciated cost of the property.

Q. What did you figure it was going to cost you to operate this line for the first three years before the second clause came into effect?

MR. COATES: Do you mean per Mcf of throughput?

Q. Yes.

MR. COATES: Well, this 7.2-cent figure would be the cost of whatever gas was transported through the line.

Q. But, as I understand this agreement, for the first three years all you were going to pay was the cost of transportation, and that cost of transportation was to be calculated on the basis of the line operating at two-thirds capacity and yielding to the Crown a $4\frac{1}{2}$ per cent return. Following the end of the third year and commencing the fourth year, then the rental changed so that the Crown would receive, in effect, a 7 per cent return.

Is that correct?

MR. COATES: I believe so. I believe, Mr. Pattillo, that the depreciation and the interest to the Crown started from the first year; that the additional one per cent that may be chargeable by

the Crown commenced in the fourth year, and that was to commence in the fourth year if there had been a deficiency accumulated in either interest or depreciation by reason of not enough gas passing through the line at 7.2 cents per Mcf.

Q. What I am trying to get at is what it costs you for the first three years as opposed to what it is going to cost you thereafter.

MR. COATES: Well, it does depend on the deficiency and we have to figure out what the deficiency is.

I think Mr. Tippy has some figures in the original feasibility report, Mr. Pattillo.

MR. TIPPY: Mr. Pattillo, the complete computation we have on the Crown rental appears in the economic feasibility report, volume 2, in Appendix A to the February 6, 1957 review, Exhibit 8FR, Schedule 5, Plan 2.

This shows that on the basis of the volumes and the cost estimates that were involved in this feasibility study the first part of the rental as provided by the formula would work out to 7.208 cents, as Mr. Coates has just referred to, in all the years, and that only in the year 1962, in the way the formula operates, was there any additional rental based on the one per cent of $120 million-odd, which came out to $1,200,000, as is shown under the twelve months ended in 1962, and that

that deficiency was specified in that year so that the following year the one per cent provision did not have effect.

This is a complicated computation and, if any one of the elements varies, it is rather involved to track through.

Q. What I am trying to get at, Mr. Coates and Mr. Tippy, is this:

Is there a period in the lifetime of this contract that it becomes very much in the interests of the company to buy this part of the line built by the Crown rather than continue to lease?

MR. COATES: Sir, I might go on with some other provisions in the contract which would tend to answer that question, I believe.

Q. Right.

MR. COATES: If you would look at page 7, section 8 of the contract:

Notwithstanding the provisions of Section 7, which have to do with rental, Trans-Canada shall not be entitled to purchase nor shall the Crown Corporation be obligated herein at any time to sell the assets and facilities comprising the Northern Ontario section (a) before the Crown Corporation has received, from the date of completion of construction, an annual return of 3½ per cent on its invested capital and outstanding capital obligations as hereinbefore set out; (b) at a price less than

the amortized capital cost of the Northern Ontario section, which shall be determined by applying, at the date of completion of construction, the total capital cost from time to time amortized at the rate of 3½ per cent per annum, plus interest thereon compounded annually at 3½ per cent per annum, and (2) 70 per cent of the capital cost of the Northern Ontario section at its initially designed capacity as defined in subparagraph 3 of paragraph B of section 6, whichever is the higher amount.

Q. Now, does that, in effect, mean this, that the rate of depreciation was to be 3½ per cent per annum?

MR. COATES: Yes, sir.

Q. The Crown only wanted to get its depreciation and, provided it got its depreciation, then you could buy at the depreciated cost?

MR. COATES: Got its depreciation and all of the interest that was due on the property during the time.

Q. Well, the depreciation is 3½ per cent per annum and all they were asking was 3½ per cent per annum, which would cover the depreciation. But if you did not pay the depreciation in any one year, then they were going to charge you a rate of interest of 3½ per cent on that deficiency?

MR. COATES: That is correct.

Q. And you could buy, provided you paid the depreciated cost at any time?

MR. COATES: Until it was depreciated to 70 per cent of its original cost, at which time, for purposes of purchase, it would depreciate no further.

Q. So if you wanted to make the best deal possible, you have got to buy before it gets to a depreciated value of 70 per cent?

MR. COATES: That is correct.

Q. After that, it is going to cost you money?

MR. COATES: That is correct.

Q. And that will occur in what year? It will be about the eighth year or less than that, will it not?

MR. COATES: Mr. Tippy has the figures on that.

Q. The sixth year, is it?

MR. TIPPY: It is beyond the fifth year and I don't have that figure.

MR. COATES: As I recall the figure, it is about the seventh year, so it is in that ratio, between the sixth and seventh years.

Q. Now, then,following that document, on the 26th of April, 1956 there was an amendment to it extending the time of the operation of the document?

MR. COATES: Yes, Mr. Pattillo.

Q. And then, on the 29th of October, 1956, there was a further amendment, further extending the time?

MR. COATES: Yes, sir.

Q. Then, on the 29th of November, 1956 there was a further extension of time?

MR. COATES: That is correct, sir.

Q. Then we come to another amendment and that is dated the 30th of January, 1957, which was immediately prior to the public financing. Now, what was the purpose of this amendment?

MR. COATES: I believe, sir, that in the intervening time between the original agreement and this agreement there was organized and put into operation the Northern Ontario Pipe Line Crown Corporation, and I believe this agreement is an assignment from the Crown to the Northern Ontario Pipe Line Crown Corporation of its commitments under the original agreement of November 21, 1955.

In other words, this put the contract into operation.

Q. But there is no effective change in the terms?

MR. COATES: No, sir, there were no effective changes in the terms.

Q. So, to sum up, the result of the agreement today is that when this line goes into

operation, the company will be paying, as rental, the taxes, the expenses of operation and the rental based on the volume of gas that is transmitted through that section of the line which you anticipate, from your calculations, will be 7.2 cents per Mcf?

MR. COATES: Yes, sir.

Q. That up to the time the depreciated value of this section of the line has reached 70 per cent, you can purchase, at any time, at the depreciated cost?

MR. COATES: That is right.

Q. The Crown only seeking to get, in the interval, the annual rate of depreciation of $3\frac{1}{2}$ per cent?

MR. COATES: Yes, sir, plus any expenses of the operation of the Northern Ontario Pipe Line Crown Corporation, any salaries or wages or expenses.

Q. And, after the depreciated cost has got to 70 per cent, then, no matter how long it may be before you buy, you still must pay 70 per cent?

MR. COATES: That is correct.

Q. And, as I understood it this morning from Mr. Orme, in making the calculations to which I am now going to come, this cost of rental is carried into the over-all cost of the whole system, just as taxes or any other fixed charge is carried in, is that correct, Mr. Orme?

MR. ORME: That is correct, sir.

MR. COATES: Mr. Pattillo, may I make one further observation in connection with the final document of January, 1957?

Q. Yes.

MR. COATES: I said, a minute ago, there was no material change. I believe the original document intervened with the Crown building the entire 675 miles in one construction season. The document of January , 1957 makes provision for the Crown Corporation to build from the Manitoba-Ontario border to the vicinity of Port Arthur and Fort William in one year and the remainder of the pipe line in the next year.

There are no other material changes in it.

Q. Now, Mr. Coates, may I ask you this question:

Did you, as the executive vice-president at that time of this company, consider that the success of building this line was assured when the oral agreement was reached with the Government for it to build this section of 675 miles?

MR. COATES: No, sir, I don't think it assured the complete success of the Trans-Canada system. There were a considerable number of miles of pipe line that had to be built in addition and, in order to build that additional mileage that Trans-Canada would own itself, it was necessary that a sufficient market be developed to provide

revenue that would make it possible to finance those other sections.

I think this made a material contribution to it, but it was not the full answer to the problem.

Q. You still had to have the markets developed?

MR. COATES: Yes, sir.

Q. But it enabled you to proceed with the economic feasibility of the line with a much lesser market than you would have otherwise had to have to finance?

MR. COATES: Well, it made it possible for us to proceed with a financing that did not require as much money as would have been necessary without this assistance.

Q. Now, I think probably at this point, Mr. Tippy, before I swing over to the Emerson contract, if you have those exhibits that are prepared, perhaps we could see them and can put them before the Commission.

CC

THE CHAIRMAN: Mr. Pattillo, before you proceed to that phase of questioning, there is a question I would like to ask at this stage of Mr. Coates if it will not disrupt your line of thinking.

MR. PATTILLO: Not at all, Mr. Chairman.

THE CHAIRMAN: Mr. Coates, we have heard a lot about this contract and you obviously were in on the negotiations all the time as executive vice-president at that time of Trans-Canada. Would you be good enough to give us an idea of how this Crown Corporation arose, who suggested it to whom?

MR. COATES: It was suggested as a result -- I would say it was a suggestion from the government as a result of a committee of Civil Servants who were appointed from the Department of Finance and from the Department of Trade and Commerce to explore the many facets of Trans-Canada problems and to devise some method that might be of some assistance in getting Trans-Canada a little further on its way.

THE CHAIRMAN: That is right; I think you did tell us that, and this followed the breakdown of the idea where the officials of the government sat down and proposed this to Trans-Canada, is that correct?

MR. COATES: That is correct.

MR. PATTILLO: Q. Now, can we have this exhibit marked C-24-7? It is headed "Exhibit A, Trans-Canada Pipe Lines Limited Estimated Total System Transmission Costs of Service."

---EXHIBIT NO. C-24-7: Trans-Canada Pipe Lines Limited Estimated Total System Transmission Costs of Service.

Q. Now, Mr. Tippy, would you please explain this to us, and I am going to take the year 1958-59 which, as I understand it -- let me take the year, rather, of 1959-60, which I understand is the year commencing November 1st, 1959?

MR. TIPPY: That is correct, Mr. Pattillo. Mr. Orme prepared this exhibit; would you care to have him answer these questions on it?

Q. Well, it does not make any difference, whichever one wishes to answer.

Dealing with that -- I am now dealing with the left hand column under the heading "Without Emerson Sales"; now as I understand it that portion of this document relates to the proposed Canadian line to Montreal and pays no regard to sales at Emerson or sales at Niagara; is that correct?

MR. ORME: That is correct. The first six columns of the tabulation have no facilities relating to the Emerson sales, and it is so headed,

"Without Emerson Sales".

Q. And it does not say anything about Niagara, so I was asking does that also exclude Niagara?

MR. ORME: It does, yes, sir.

Q. The first figure shows the capital cost of that operation of the pipeline which will be owned by Trans-Canada, is that right?

MR. ORME: That is right.

Q. And next is the capital cost of the compressor stations?

MR. ORME: That is correct.

Q. The following figure is the cumulated depreciation up to that time?

MR. ORME: Yes, sir.

Q. Leaving the net plant investment at the end of the year of $226 million odd?

MR. ORME: Yes, sir.

Q. Now then, you come to a sub-head, "Rate Base". You show the average net plant investment during the year, and you show a difference there of $5 million between the figure up above as representing the net plant investment, and will you explain how that difference arises?

MR. ORME: Yes, sir. The $226,792 figure is the net plant investment at the end of the year.

Q. Would you please not refer to it as $226,000, because it is millions, and in Nova

Scotia there is still a difference.

MR. ORME: The $226,526,000 figure is the net plant investment figure at the end of the year.

Q. You have got over to 1960-61.

MR. ORME: $226,792,000 is the net plant investment at the end of the year. The $231,149,000 average net plant investment during the year is the average of $235,505,000 appearing at the end of the preceding year, and the $226,792,000 appearing at the end as the net plant investment at the end of the year we are referring to, 1959-60.

Q. All right. You have simply averaged the two and said because of the depreciation during the year and the plant additions during the year, this is a fair average figure to take?

MR. ORME: That is correct, sir.

Q. Now, what do you mean by the next, Materials and Supplies 1.25 per cent gross plant investment? Would you explain that figure?

MR. ORME: This is our estimate of what Trans-Canada will require for materials and supplies in order to operate and maintain its pipeline operations.

Q. But those will not be capital additions to the plant itself?

MR. ORME: No, sir, it will be inventories but will represent cash that the company

will have tied up at all times.

Q. And the gas in storage in the pipeline is the same thing?

MR. ORME: Yes.

Q. Then, Cash Working Capital 1/8th of O. & M. excluding rentals: would you please explain that?

MR. ORME: That is the customary allowance that regulatory commissions usually allow for cash working capital; it is one-eighth of operational and maintenance expenses or out-of-pocket expenses other than the pipeline rental which, of course, requires no direct supervisory effort or anything of that kind and is payable after revenues have been received from gas sales.

Q. What you are suggesting is, if this company is going to be properly financed, it must have that liquid working capital on hand?

MR. ORME: Yes, sir; it is my own opinion that they should have some more cash than that, but that is the customary figure that regulatory authorities usually allow.

Q. When you say "regulatory authorities", that is the F.P.C.?

MR. ORME: Yes, and in the States the State Commissions pretty well follow along with the F.P.C. allowance.

Q. Just to get it on the record, when

did you join F.P.C.?

MR. ORME: It was in 1938, about 6 days after the Natural Gas Act was passed.

Q. And how long were you with them?

MR. ORME: 10 years.

Q. 10 years?

MR. ORME: Yes, sir.

Q. And during that period of time what work were you doing for them?

MR. ORME: I was senior rate investigator and senior gas engineer.

Q. Now, coming to the transmission costs of service, there is no difficulty about the first item, "Gas Purchased", but the "unaccounted for Gas", how do you arrive at that very large figure?

MR. ORME: That is a 1 per cent allowance that customarily is made for new welded steel pipelines; that is, it represents the price of 1 per cent total estimated cost of sales plus that required for engine fuel.

Q. And that is based on the sales price, 1 per cent of the sales price of the gas that goes into the line?

MR. ORME: No, sir, it is 1 per cent of the gas sales volumes plus engine fuel and priced out at the average cost of gas purchased.

Q. Now we come to operation and maintenance expense, pipelines; is that on a mileage basis,

the figure of $1,245,000?

MR. ORME: Yes, sir, it is. 34 inches is estimated at $400 a mile; 30 inches at $700 a mile, and the 20-inch to Montreal and the 24-inch to Sheridan and the lateral line to Ottawa are estimated at $300 a mile.

Q. And are those figures that are commonly used by the F.P.C.?

MR. ORME: Those are figures that are commonly used by engineers in estimating the cost of operation and are average cost figures which the F.P.C. have accepted as being reasonable before.

Q. And from your experience over the years since 1938, do they represent -- those estimates represent reality as based on experience?

MR. ORME: Yes, sir, but you have to bear in mind in estimating the cost of the operation of a pipeline you must take into consideration the terrain and accessibility and so forth. For that reason we estimated 30-inch at $700 a mile as opposed to $400 a mile for 34-inch.

Q. That is because of the inaccessibility of some of the lines?

MR. ORME: That is right.

Q. Now, the compressor stations: what are they based on? Is that $14 a horsepower?

MR. ORME: That is $14 per installed horsepower. Of course, during some of the year all the

horsepower is not operated. This $14 figure is against the installed horsepower in the operating areas.

Q. From your experience is that a fair and reasonable rate?

MR. ORME: Yes, sir, it is, in my opinion, a reasonable rate reflecting the proportions of centrifugal compressor units and reciprocating compressor units that the company proposes to install.

Q. The next figure, communications, at $135 per mile: what is that?

MR. ORME: Well, that is an allowance for the company's communications in connection with the operations.

Q. What communications--telegrams back and forth?

MR. ORME: It could either be a lease line or "build your own"; it is an allowance to have a lease line from the telephone company.

Q. That has got nothing whatever to do with flying back and forth over the line?

MR. ORME: No, sir.

Q. That is just communication from one station to another?

MR. ORME: Yes, either telephone or radio. There are going to be a number of radio stations.

Q. There is going to be a radio station?

MR. ORME: That is right.

Q. Meter and regular stations, $6,000. A station -- what is that?

MR. ORME: That is an allowance for operating the various metering and regulating stations that the company will install in connection with its gas purchases and its gas sales.

Q. That is at the Saskatchewan gate to begin with?

MR. ORME: Yes, sir.

Q. And at the take-off points of the various distributors?

MR. ORME: That is correct, sir.

Q. How did you arrive at this figure of $6,000 a station; is that based on your experience?

MR. ORME: Yes, sir.

Q. Is it a fair and reasonable charge?

MR. ORME: Yes, sir, I believe it is.

Q. Now the pipeline rental to the Crown Corporation, that is calculated in what manner?

MR. ORME: That is calculated in accordance with the provisions of the rental agreement reflecting the estimated cost of the facilities involved, and also reflecting the volumes of gas which will go through the Crown Corporation and in which the 7.2¢ per MCF will be involved. I might add in these particular years that are reflected on this schedule and reflecting the sales which are also reflected on this schedule and

associated schedules, the only payment that is payable during those years is the 7.208¢ per MCF of total sales that go through the Crown Corporation. There is a deficiency in the year 1958-59 which is reduced by the end of the third year, so when the fourth year comes up in which the additional 1 per cent is payable, there is no longer any deficiency so it is not applicable to that.

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Q. Now, then, we come to administration and general expenses. Are these estimated on the basis of the present expenses of the company?

MR. ORME: I think they are, probably, a little on the high side, Mr. Pattillo. These are allowance which we customarily estimate for administrative and general expenses for a new pipeline which is on a somewhat higher ratio, and such expenses taper off when the other costs of operation become larger and more constant.

Q. And depreciation, that is the 3 1/2 per cent of the company's plant; is that correct?

MR. ORME: That is correct.

Q. Taxes, those are general taxes, are they?

MR. ORME: General taxes shown on the exhibit are figured at 4/10ths of a per cent of the gross plant including both that of Trans-Canada and that of the Crown Corporation in accordance with the rental agreement.

Q. And the next figure we come to after that sub-total is the return of 7 1/2 per cent.

MR. ORME: That is correct; and the amounts that are shown for return on the exhibit have been computed on the basis of 7 1/2 per cent of the total rate that is shown for each particular year.

Q. It is as you have already pointed out, a different figure than is shown for net plant investment?

MR. ORME: That is the average net plant investment plus allowance for material, supplies, cash working capital and gas in storage in pipeline, and are usually allowed on a total rate base.

Q. I just want to get this clear: any person that was working out their system of costs on a method similar to that which is used by all gas pipelines in the United States, would not start with their rate base, merely being the capital investment, but would have a somewhat higher figure? It would not start with merely their net plant, but would have a somewhat higher figure?

MR. ORME: When you refer to plant, you mean a higher figure than the net plant -- after depreciation?

Q. Yes.

MR. ORME: Yes, that is correct.

Q. Were you here when Westcoast gave evidence?

MR. ORME: No, sir, I was not.

Q. Now, income tax: at 47 per cent that is the basis on which income tax would be payable, assuming that these figures were correct?

MR. ORME: That is correct. They are

calculated on a basis of 7 1/2 per cent of the return; that is general and reflecting the entries, the estimated entries of the options associated with the assumed financing of the investment reflected on the exhibit.

Q. Now, we come to annual volume gas sales at 135 billion cubic feet, and that is based on your exhibit that we have been dealing with before, Exhibit 5 in your book, is that right?

MR. ORME: No, sir, they are not.

Q. Oh, no, no -- this is the basis on what you thought the situation was in December before you made up this file?

MR. ORME: No, I would not say "what we thought"; it was what we knew we were definitely sure of, and this was drawn up to get a permit to acquire additional gas supplies.

Q. Weighted average miles haul, annual basis. Would you please explain those figures?

MR. ORME: That is the average mile haul on the entire pipeline system of Trans-Canada, including the Crown Corporation, of the total volumes transported by the system in each of the years. It is arrived at, more or less, in a manner that I have described earlier this morning. This particular one is on the basis of annual sales wherein the annual sale of each delivery point is multiplied by the miles hauled by that particular delivery point, re-

sulting in miles MMCF or the volume of miles, and these are added together to get the total annual volume miles for the system, and that is divided by the annual volumes, which give you the weighted total average miles.

Q. Let us see if we can get that a little clearer: you have the Saskatchewan zone and from the Saskatchewan gate to the middle of that zone is so many miles.

MR. ORME: That is right.

Q. Then you have a Manitoba zone and you have so many miles from the Saskatchewan gate to the middle of that zone.

MR. ORME: That is correct.

Q. Now, let us assume we did not have any other line at all; that is all we had, just to Winnipeg. Would you get the weighted average mileage, taking the number of miles from the Saskatchewan gate to the middle of the Saskatchewan zone, multiplying it by the volume of gas that went through the pipeline destined for the Saskatchewan zone, and then making the same calculation for the Manitoba zone and adding the two together, and that would give you your total mileage MCF, and then divide in the proportions of the volumes that went through to each zone and, in that manner, you get the weighted average. Is that what you do?

MR. ORME: Substantially, I think that is

right, except that in the initial approach that is done by actual delivery points rather than to a medium result, so you can get the average haul in any zone as well as over the entire line. That reflects the low distribution along the line.

Q. Now, would you explain this unit cost of transmission per MCF which you work out here at 35.643¢. How do you get this figure?

MR. ORME: 35.643¢ was arrived at by dividing $48,451,000 of total costs of transmission, shown immediately above for the year, by $135,933,000,000 annual sales estimated for the year.

Q. Then you come up with the figure per MCF per 100 miles of 2.076¢. How did you get that?

MR. ORME: That figure was arrived at by dividing 35.643¢, which we have just been discussing, by 1,717 miles weighted average system haul shown for that year.

Q. Finally, we have the cost of gas purchased, which is based on the actual contracts of the company.

MR. ORME: Insofar as those contracts, there was sufficient gas to supply the volumes of sales estimated in this study, but insofar as additional gas required to supply the sales reflected in this study, I think Mr. Horte testified

concerning that this morning. For the additional volumes of gas at a starting price of 13 1/4¢ at 14.4 pressure and escalating 1/4 of a cent each year thereafter, for the purpose of this study since all of these volumes used are shown at 14.73 pounds, it was necessary to reduce the 13 1/4¢ at 14.4 pounds pressure base to an equivalent price of 14.73 pounds pressure base.

Q. And the price for Alberta Trunk gathering is in accordance with the terms of that contract?

MR. ORME: Yes, sir, they are the ceiling price of 4¢ paid on the Alberta Trunk line in this development period and the 4.092¢ shown on the schedule merely represents a conversion of that 4¢ on a 14.4 pressure basis to a 14.73 pound pressure basis.

MR. PATTILLO; Mr. Chairman, I have dealt now with the Canadian picture on an 909 MCF/day input system, and I think this might be a good place to break before I deal with the Emerson picture.

THE CHAIRMAN: We will have a ten minute break.

---A short recess.

THE CHAIRMAN: Yes, Mr. Pattillo?

MR. PATTILLO: Thank you, Mr. Chairman.

Q. Now, Mr. Orme, can we just look at

Exhibit C-24-7, which we have been examining so far as to the Canadian market only and compare the results you achieve when you include the proposed Emerson contract.

MR. ORME: You are speaking with respect to the net results in the total cost unit, cost of service?

Q. No. Please let me do this in my own way. For the year 1959-60, which is the year which we did before, this is the first year you contemplate the Emerson contract, if a permit is granted, being in existence and operating; is that correct?

MR. ORME: That is correct, yes.

Q. And as a result of the extension from the main line to Emerson, your net plant will be increased from $226 million odd to $244 million odd; is that correct?

MR. ORME: That is right.

Q. And your total rate base will increase from $235 million odd to $244 million odd?

MR. ORME: That is correct, yes.

Q. Now, the difference between your total rate base and your net plant investment is very negligible if you include Emerson in that year, as opposed to the difference of over $9 million, or approximately $9 million -- $8 1/2 million--without Emerson in?

MR. ORME: That is correct.

Q. Now, will you explain the reason for that differential?

MR. ORME: It works out by averaging the end of the preceding year with the net plant investment at the end of the year which we are considering, and, also, reflecting the difference in the depreciation that accrues.

Q. That would be by taking the net plant investment at the end of 1958-59 at $235 million and averaging it with the net plant investment in 1959-60 with the Emerson extension in of $244 million?

MR. ORME: That is correct; that average figure is $240,211,000.

Q. Your gas purchases go up very substantially because of the Emerson extension.

MR. ORME: Yes, sir.

Q. From $552,000 to $1,329,000.

MR. ORME: Yes, sir. I might say that those are gas purchases for compressor station fuel, unaccounted for gas, and is not the cost of gas purchased for sale.

Q. And the same thing, the next figure goes up because of the unaccounted for gas?

MR. ORME: Yes, sir.

Q. Now, the operation and maintenance expense items, in all, increase by approximately $500,000; is that right?

MR. ORME: Yes, sir, that is correct.

Q. And when we come to the administration and general expenses, they increase, approximately, $400,000 including your income tax and the rate of return.

MR. ORME: That is correct, yes.

Q. So that your total costs of transmission have increased about $2,800,000 as a result of adding in Emerson?

MR. ORME: Yes, sir.

Q. And your annual volumes of gas sales increased by 70 billion cubic feet?

MR. ORME: That is correct, sir.

Q. Now, the weighted average miles haul drops from 17.7 miles to 13.51 and, I suppose, the reason for that is the shorter distance from the Saskatchewan gate to Emerson with the high load factor; is that correct?

MR. ORME: That is correct.

Q. And that affects the weighted average of the whole line?

MR. ORME: Yes, sir.

Q. Resulting in a unit cost per MCF of almost 9¢ less. Is that right?

MR. ORME: That is correct; yes, sir.

Q. And the transmission cost per MCF 100 miles drops from 2.76¢ to 1.848¢.

MR. ORME: That is per 100 miles, yes, sir.

Q. Further, what this does do, the Emerson

contract increased the average cost of your gas from 10.453¢ per MCF to 11.525¢ per MCF?

MR. ORME: Yes, that is by reason of the additional -- of the 13 1/4¢ cost charged.

Q. It is because of the fact you need to supply the Canadian demand and the Emerson demand that the company has to go out and buy additional quantities of gas?

MR. ORME: Yes.

Q. It cannot do it with what it now has?

MR. ORME: That is what has been assumed in these studies; yes, sir.

Q. But the overall picture, with Emerson in it, in the operation of the line results in a reduction of unit cost of, approximately, 8 1/2¢?

MR. ORME: I make it 9.6¢ in the total.

Q. 9.6 and an additional cost of how much?

MR. ORME: You were talking about the cost of transmission; I was taking the decrease and unit cost of transmission to offset the increased cost of gas purchases resulting in an overall net decrease of 9.6¢ for that particular year.

Q. And that is the saving you anticipate the company would make in its overall costs of operation if it is permitted to have the export permit to Emerson?

MR. ORME: In its unit cost of operation, yes.

Q. In its unit cost of operation.

MR. ORME: I would say it is not a saving, it is a reduction in the unit cost.

Q. Would you just turn over the page, please? Just looking at the same year, 1959-60: am I correct in thinking that the annual sales to Canada, you anticipate that at 135,933,000,000 cubic feet, and the annual sales at Emerson would be 69,136,000,000, and your losses would be 8,000,000,000, making a total of 213,581,000,000 cubic feet. Is that right?

MR. ORME: Yes, sir.

Q. The next page, page 3, shows you arrive at -- still dealing with the year 1959-60 -- an average purchase price and transmission costs to the Saskatchewan gate without Emerson and with Emerson; is that correct?

MR. ORME: Yes, sir.

Q. May I come to the next exhibit, which is marked (b) which I would like to have marked for the record, Exhibit C-24-8.

---EXHIBIT NO. C-24-8: Comparison of Estimated Revenues and Costs of Service for Proposed Sales to Midwestern Gas Transmission Company at Emerson, Manitoba.

Q. Now this exhibit, as I understand it, is dealing solely with, on page 1, the proposed

Emerson contract. Is that right?

MR. ORME: Yes, sir.

Q. And, again, I am going to take the year 1959-60. The demand charge monthly is as shown here, $2.20 per MCF.

MR. ORME: Yes, sir.

Q. And that reflects an annual charge of $26.40.

MR. ORME: Yes, sir.

Q. The commodity charge is 20¢, that is under the terms of the contract sales -- the $2.20 that I have just dealt with?

MR. ORME: Yes, sir.

Q. And the take-or-pay minimum load is 75 per cent under the contract?

MR. ORME: In that year, yes, sir.

Q. And that remains the same until we are into 1962-63. Is that right?

MR. ORME: That is correct.

Q. When it goes to 95 per cent?

MR. ORME: Yes, sir.

Q. Will you please give us what you mean by this "estimated sales demand"? You have reduced the previous pressure of 15.025 to the pressure of 14.73.

MR. ORME: That is correct. The purpose of it on this schedule is in order to put the revenues on a comparable pressure basis to the costs

of service to which these revenues will be related. The contract volumes in the Midwestern contract are on a pressure basis of 15.025 pounds, whereas our projections to sales and costs of service are at Trans-Canada's sales pressure price of 14.73, so it has reduced them to a common denominator.

Q. I can understand that, but why do you show $204,000 and $200,000 too? You also show $69,136,000 and $67,778,000. Should you not knock out the $200,000, or, rather, the $204,000 and the $69,136,000 in your additions?

MR. ORME: Yes, sir, I could, but the only reason for adding it is this: in the other exhibits to which we have been referring, the sales -- we do show Midwestern 14.73 pounds, which is 204,000 MCF, so I could have taken the contract at 15.025 pounds charged and reduced that to a 14.73 pound basis, or I could take the 204,000 or the volumes which we have previously expressed at 14.73 and reduced them to the contract pressure base, but I did it the other way.

Q. But you did not do, like a jury once did to me, you do not add them together.

MR. ORME: No, sir.

Q. Now, estimated revenues, demand charge, that figure of $5,385,000-odd is a result of multiplying the $26.40 by what?

MR. ORME: By 200,000.

Q. Right.

MR. ORME: No, 200 million max. daily.

Q. And the commodity charges of $13,555,000 is obtained by multiplying what by what?

MR. ORME: Multiplying the 67,778,860 of gas at 15.02 pounds by 20 cents.

Q. And that is the minimum amount for which they must pay?

MR. ORME: No, sir, these are in excess of the annual volumes which Tennessee propose to take, in excess of the minimum take-or-pay.

Q. Why wouldn't you work it on the minimum take-or-pay? Why would you use these other figures when we are working on an estimate?

MR. ORME: Well, the sales figures which we had are those which Tennessee has from time to time estimated that they would take, actually, from us, during each of the years shown on the schedule.

Q. You agree with me that to get a picture as bad as it might turn out to be, you should take the minimum take-or-pay figures?

MR. ORME: Yes, sir, but I point out that if you reduce the annual volume of sales, which, of

course, would result in a reduction of revenues, you would also reduce the amount of cost of service, commodity cost of service which would be allocated to those sales, and to what extent they would offset each other I have not made a computation.

Q. Then you show the cost of gas purchased, as dealt with in the other exhibit, and the annual volumes of gas as shown up above, and then you show the total cost of gas purchased, which is the multiplication of the two foregoing figures, is it?

MR. ORME: Yes, sir.

Q. And then the allocated portion of the total system transmission cost of service, and that is $8,330,000, which is ascertained by the difference of what figures in what exhibit?

MR. ORME: I beg your pardon, Mr. Pattillo? I did not follow your question.

Q. This allocated portion of the total system in transmission cost of service of $8,330,000 is ascertained by subtracting what figure from what figure, in which exhibit?

MR. ORME: That allocated portion of total system transmission cost of service of $8,330,000 is transferred from page 2 of the exhibit to page 1, which you are looking at.

Q. From page 2 of Exhibit B?

MR. ORME: That is correct.

Q. As I understand it, in 1959-60, on the Emerson contract, you would need to make $185,000.00 more in order to come up with the 7½ per cent return?

MR. ORME: And income taxes, yes, sir.

Q. You agree with me that calculating on the FPC formula, the income taxes should be in there first?

MR. ORME: Yes, sir, that is correct.

Q. In other words, if we ask the Mid-West Company to pay, at Emerson, the price as defined by Mr. Kayser of El Paso as being the cost of service including 7½ per cent return, they would have to pay a price for gas higher than they would now contemplate which would yield a figure of $38,697,000 in the year 1959?

MR. ORME: Yes, sir.

Q. Now, can you tell us how much that would be, how much the commodity price would have to go up?

MR. ORME: No, sir, I have made no computation. I have made a computation to show what the actual rate of return in that particular year would have been and that would have been 7.2 per cent return.

I would like to further explain that in the computation of the total system costs of service and particularly with respect to the income tax

computations, that such income tax computations were made on the basis of book depreciation rather than a $3\frac{1}{2}$ per cent depreciation straight line, and did not take into consideration the tax savings in earlier years which could be derived by computing income taxes on the basis of a 6 per cent decline in balance method, which has the effect of postponing taxes in the earlier years and accelerating them in the later or more profitable years.

THE CHAIRMAN: Well, we have had evidence before us, I think, in these hearings, that with a 20-year permit it is wise to depreciate on the straight line basis and get your line substantially depreciated before the end of 20 years.

MR. ORME: Yes, sir, I certainly would think so, if you have the situation that you cannot postpone it for a short time without it becoming prohibitive.

MR. PATTILLO: Q. Yes, but what I am trying to get at, Mr. Orme, and what the Commission wants to get at, too, is that if we are going to sell gas from this country to Mid-West or any other person, you agree, from the standpoint of Canada using up a wasting natural resource, it should get a reasonable and fair return for the resource, don't you?

MR. ORME: That is correct.

Q. And from your ten years' experience

as an employee of FPC in charge of rate-making, would you agree with me that if we were going to approach the problem in Canada in the same way in which the FPC would approach it in the United States, Mid-West should be required to pay an additional amount in 1959 and 1960 to make up this $185,000?

MR. ORME: Assuming that these estimates work out as they are. Of course, they should be on an actual cost basis.

Q. Well, assuming that the estimates are correct?

MR. ORME: That is correct.

Q. And from your twenty years experience in the gas business, you have confidence in these estimates, have you not?

MR. ORME: I think they are ample, right.

Q. What I want to find out, and I am sure the Commission do -- and I know you cannot give it to us tonight, but will you tell us, tomorrow morning, how much the commodity price would have to go up or how much the demand costs would have to go up or how much both would have to go up; there are the three alternatives.

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MR. ORME: Well, I can tell you now regarding the commodity costs, that it would be on the order of one-quarter of a cent, if it were all put on commodity costs.

Q. Now, this deficit does not seem to get any better as we look at it. In fact, it gets worse and when we get over to 1962-63 we have got a deficit of $361,000. Will you explain why the thing rockets up to that figure?

MR. ORME: I think the real explanation for that, Mr. Pattillo, is that this design that was used on which these estimates of required investment and costs of services were based, was, of necessity, fairly rough and done pretty quickly without giving the usual consideration as to proper balance between installing horsepower and installing loop lines.

My own opinion is that this indicates that the design on which this cost is based is a little bit over-powered and probably would have been done with a combination of partly horsepower and part loop lines, which would have a tendency to level those costs off.

Q. Supposing that just did not happen. How much additionally would you need as commodity price in 1962-63 to wipe out this deficit of $361,000?

MR. ORME: That would be about one-half

cent increase if the full increase is made in the commodity costs.

Q. And, from there on, what is the situation? Do we then get into the black

MR. ORME: It is in the next year, I believe, that the rate goes up under the Tennessee contract, by another one cent average per Mcf.

Q. And that would put us in the black?

MR. ORME: Presumably so. I have not extended it.

Q. So, if we were going to be sure that this contract was going to be a profitable one from the beginning, we should say to Mid-West, "We like you fine, but another half cent"?

MR. ORME: I would like to see it come in a year earlier, sir, myself.

Q. What do you mean by that?

MR. ORME: Well, the increase in price in the Tennessee contract is geared to an average increase of -- I mean an increase in average price of one cent every five years; whereas, under the escalations and because of the gas purchases such having increased at the rate they increased, one-quarter cent a year, I personally would like to see the two things geared.

Q. So the increase should not be every five years; it should be every four?

MR. ORME: That would be my own opinion.

Q. So if we get one-half cent to start with and an escalation of over four years instead of five, we would be ---

MR. ORME: We would be geared to the gas purchase contract.

Q. Supposing you were the official of the Government who had to make a decision as to whether or not you were going to approve this proposed export at Emerson, and you had all these calculations in front of you that you now have and, recognizing the principle that you recognized a few minutes ago, would you say that unless the contract price were increased by one-half cent and the escalation changed from five to four years, it would not be a contract that would be desirable from the standpoint of Canada?

MR. ORME: I think I would have to take all the factors into consideration, Mr. Pattillo. I would have to take into consideration, within these early years, that the Canadian sales themselves are not anywhere near earning a $7\frac{1}{2}$ per cent return, so I think I would have to take into consideration, in making that decision, the effect or impact on the over-all financial picture of Trans-Canada as a result of these sales, during the early years particularly.

Q. You might also take into consideration, as an offset to that, the release that

Tennessee made by being a shareholder in Trans-Canada?

MR. ORME: I am not familiar with those transactions, Mr. Pattillo.

Q. They did not do badly, for a guarantee of pipe.

Now, I just want to be sure that we understand page 2 of this last exhibit, before I leave it, and I am looking at the year 1959-60 again, where, in figuring the total system transmission costs of service, and you include there in the cost of gas purchased for fuel and losses, the operation and maintenance expenses ascertained from the previous exhibit, the administration and general expenses ascertained from the previous exhibit, the pipe line rentals -- and that is ascertained also from the previous exhibit -- and depreciation on the company's plant and the taxes,and all of these are taken from the previous exhibit, are they not?

MR. ORME: Yes, sir.

Q. Now, will you please explain the allocation of the total system transmission costs of service as between Canada and Emerson?

MR. ORME: The first step taken in the allocation of the total system transmission costs of service is to classify such costs, total costs, as between demand costs and commodity costs, which has been done on Exhibit B.

The classification shown on Exhibit B is in accord with that followed by the SPC, with one slight exception, that the Commission has, in some recent cases, classified material supplies, which is a very small item, as commodity costs rather than to split them as 50-50.

After having classified the total costs as between demand costs and commodity costs, such classified costs are then totalled in order to get a total demand cost and a total commodity cost, which, together, are added to the total system costs.

The demand costs are then allocated as between the Emerson sales and the Canadian sales on the basis of the ratios of their respective demand Mmcf miles.

The commodity costs are allocated as between Emerson and Canadian sales on the basis of the commodity or annual Mmcf miles, and the allocated costs to the two sales, as just described, are then added together in order to get the total allocated costs of service to Emerson and to the Canadian sales, and this is also the allocation procedure that is followed by the FPC and, I might say, both the allocation and the classification have been upheld by the Supreme Court of the United States in many cases.

Q. Well, now, I just want to get this straight:

When you come up with the allocation of 16.8 on demand and 15.77 on commodity, what do you do? Do you add those together and divide them by two to get the figure which you have used to arrive at the $8,330,000?

MR. ORME: No, sir. The 16.8 per cent is applied to the total of $24,772,000 appearing above to arrive at the $4,162,000 of demand costs allocated to the Emerson sales.

Likewise, the 15.77 per cent is applied to the $26,433,000 total commodity costs to arrive at the $4,168,000 of commodity costs allocated to Emerson.

The two are then added together to arrive at the total allocated costs of service to Emerson of $8,330,000.

The Canadian allocations are charged in the same manner.

Q. Now, Mr. Orme, supposing you assumed that one company owned and operated this system and let us call it the Western Company, because this was the original Western concept, that it owned and operated the system to Winnipeg and down to Emerson and that, starting from Winnipeg, we had Trans-Canada, which was buying as a single distributor, carrying on for the rest of Canada:

On that basis, the allocation of costs to Emerson would be ever so much higher, would it not?

MR. ORME: No, sir. I made a study -- I am sorry, we didn't have time to get this reproduced. It was completed about four-thirty this morning and we haven't had a chance to get it reproduced.

If I understand you correctly, the assumption to be made was that instead of allocating total system costs of service to the Emerson sales, we would allocate a portion or allocate a portion of the main line which is west of Winnipeg to the Emerson sales and, I further assume, you would then add the whole cost of the Emerson line and assess it to the Emerson sales?

Q. That is correct.

MR. ORME: I have carried that down to the same comparison as was shown -- pardon me, the same comparison as between revenues and cost of service as was shown on page 1 of Exhibit C-24-8 and, on that basis, the estimated revenues from the Western sales would exceed the cost of service for such sales, including the allocated portion of the main line transmission costs of service west of Winnipeg, 100 per cent of the Emerson lateral transmission costs of service, and the costs of gas purchased for sales at Emerson by $1,518,553 in 1959-60, and the revenues would exceed the cost of service by $795,751 in 1960-61.

In 1961-62 there would be a slight deficit

of $158,767 and, in 1962-62 the revenues would again exceed the cost of service as determined on that basis by $274,379.

I might say that these allocations of costs have been done in identically the same manner as were performed on Exhibit C-24-8.

Q. Are you in a position to give us a copy of that that we can mark?

MR. ORME: Yes, I would be glad to. The only thing is that in the reproduction, the Emerson -- we ran this out very quickly and it did not come out very clearly so I would like the opportunity of replacing it; or would you like it reproduced as an exhibit?

Q. Well, if we could have it reproduced as an exhibit and if you could file it tomorrow morning I would be very much obliged. Could that be done or is it asking too much?

MR. ORME: Well, I don't know if we could do it first thing in the morning, because I have to take into consideration that they worked until two-thirty this morning. Would tomorrow afternoon be all right?

Q. Yes. Have you an additional copy you could let us have for purposes of study?

MR. ORME: Yes.

Mr. Pattillo, I would like to make one correction before I forget it, on Exhibit C-24-8.

In the title there is a typographical error, which shows "990 Mmcf". It should read "909 Mmcf" per day, to conform with the titles on the other pages of this exhibit and on the preceding agreement.

Q. Thank you. Now, Mr. Orme, did you ever hear anything about a contract between Trans-Canada and Northern Natural Gas that was cancelled in 1955?

MR. ORME: No, sir, that contract was cancelled before we came into the Trans-Canada picture, and we have had no occasion to review it or have any knowledge of it in connection with our feasibility studies.

Q. Mr. Coates, wouldd you please put on the record the differences between the proposed contract with Northern Natural Gas that was cancelled and the present contract with Mid-West which we have just had analysed?

THE CHAIRMAN: Mr. Pattillo, before Mr. Coates answers your question and while we are on the subject of allocation of costs, I would like to ask Mr. Orme one or two questions, if it does not disrupt your thinking. We are changing over now to contracts, are we?

MR. PARTILLO: Yes.

THE CHAIRMAN: Mr. Orme, does the FPC have occasion to devise means and rules and regulations with respect to allocation of costs as between

domestic and export sales of gas in the United States?

MR. ORME: No, sir, they do not, as to any set rules. It is more or less determined in each case, taking into consideration all the conditions that exist there.

THE CHAIRMAN: How many cases are there, to your knowledge?

MR. ORME: You mean on export?

THE CHAIRMAN: I mean by way of national export.

MR. ORME: Export from the United States to Canada, you mean?

THE CHAIRMAN: Yes, sir, and Mexico.

MR. ORME: Two, as far as I know, sir.

THE CHAIRMAN: In other words, is there any criterion or any history of cost allocations through the Federal Power Commission other than domestic?

MR. ORME: No, sir -- no, sir.

THE CHAIRMAN: Well, then, coming to your domestic and interstate allocation of costs, in answer to a question which Mr. Pattillo put to you as to whether or not if you were the Canadian Government official who had to review these figures on the return on the Emerson contract, you stated, if I recall correctly, that you would take everything into consideration?

MR. ORME: Yes, sir.

THE CHAIRMAN: Then would the FPC in an interstate contract take into consideration the lower cost to some consumers and the higher cost to others in order that the average might reach the 6½ per cent net return which I understand is prevalent in your country?

MR. ORME: Well, sir, as between individual sales, as I said before, most of the pipe line companies' rates are on a zone basis now. There were some few for many years that held an over-all system but as opportunity has come up the Commission has been rather insistent that they be put on a zone mile basis and so far it has been pretty successful. They do take, in fixing the rates to be charged in

each zone, they take the zone system because of service and allocate it to the various zones in more or less the manner that I have just described. Now, that theoretically would put you in a position to determine what the level of the demand and the level of the commodity rate would be in each zone by a simple computation. That would be the theoretical part but if you follow that theory precisely you some times find yourself in a position where the commodity component as against the high level or distribution service cannot pay that price on an interrupted load, so from a practical standpoint there is a little shifting there, the commodity components and the rates.

THE CHAIRMAN: That is a very technical answer to my question but I still go back to the question. On an allocation of xosts the consumers from that pipe line in one area -- let us say one state -- would not be paying their share of the 6½ per cent so that the charges to the consumers in another state through the same pipe line would have to be higher so that the 6½ per cent as expended comes out on the average. Would they sanction such an allocation of cost?

MR. ORME: Well, on the international -- I am not trying to be evasive, but the total system cost of service, you assume an average 6½ per cent return and in fixing the rates on the various places

they are fixed on the basis that if sales will give a 6½ per cent return, rates are fixed to those mechanics.

THE CHAIRMAN: Well, drawing that inference, should not the rates be fixed to Mid-Western that it return 7½ per cent to Trans-Canada?

MR. ORME: If that is the over-all rate you are seeking,which I understand it is, you should pay a comparable rate on the other side.

THE CHAIRMAN: That is what would be done in the United States under the FPC?

MR. ORME: That is correct, sir.

THE CHAIRMAN: Well, one other question: this morning, I think you said in answer to a question -- perhaps it was Mr. Coates, I am not sure which one -- but you said that the interruptible supply of gas which Tennessee was prepared to take at Niagara meant nothing to Trans-Canada, in reality, is that correct?

MR. ORME: I believe Mr. Tippy said that.

MR. TIPPY: I was on that subject this morning, sir.

THE CHAIRMAN: Let us explore that a minute and get to the bottom of it.

MR. TIPPY: I do not believe I said it, to my knowledge.

THE CHAIRMAN: I have not the transcript here but that was certainly the inference I took

from the answer to the question, that from Trans-Canada's point of view it was not an important matter.

MR. TIPPY: It was a plus, I think I said, and it could be important under a situation of emergency and could make additional sales over week ends and times when the regular market in the line was low, but it was not a question of whether the line would sink or swim.

THE CHAIRMAN: You used the illustration of the Queen's birthday holiday?

MR. TIPPY: Yes.

THE CHAIRMAN: Now, is it not true that having that outlet to Trans-Canada would mean that you could have a higher load factor coming through your transmission line and could contract with people in Eastern Canada on a far better basis for interruptible gas?

MR. TIPPY: It is true that you could have a higher load factor than otherwise you would be able to achieve,for the reasons we have mentioned, for the markets that were envisaged in Canada, in the east, having in mind one of them being Union Gas Company of Canada which has a great deal of flexibility in the way Trans-Canada can deliver. All right, start off with a pretty high load factor to begin with, and the difference of what they could achieve without the sale at Niagara and with the

sale at Niagara is, as I say, a plus but is not a major factor.

THE CHAIRMAN: But it is ---

MR. TIPPY: It is a plus, definitely.

THE CHAIRMAN: Yes, definitely, back from your line?

MR. TIPPY: Yes, sir, the whole cost of service in the line would be important to the extent of the improved load factor but we are already thinking of load factor on the order of 90 per cent.

THE CHAIRMAN: But while you anticipate, you would never use it?

MR. TIPPY: Oh, yes, we would use it but no large volume would go across.

THE CHAIRMAN: I see, thank you.

MR. PATTILLO: Q. Mr. Coates, just before I get off to this Northern Natural Gas contract, in hearings before the Federal Power Commission have Tennessee witnesses testified to your knowledge that the proposed purchase of interruptible gas from Trans-Canada at Niagara is in any way conditioned upon their getting the Emerson contract?

MR. COATES: No, sir, I do not believe I recall any discussion of that kind. If any such thing was said I should like to re-negotiate the contract with them because the contract does say that it is conditioned upon obtaining a permit by Mid-Western at Emerson.

Q. I appreciate that is what the contract says but I have been instructed that they have said that before the FPC and I was wondering whether you or Mr. McNeill ever heard them say so.

MR. McNEILL: May we consult with Mr. Welch?

Q. Yes, certainly.

MR. COATES: Mr. Welch was Trans-Canada's counsel during the hearing before the FPC and he does not recall any such statement.

Q. Thank you. Well, now, let us come to this Northern Natural Gas contract that was cancelled by Trans-Canada in the spring of 1955. What was the demand charge that Northern Natural Gas was committed to pay as opposed to the 2.20 which Mid-West is committed to pay?

MR. COATES: Northern Natural charge was 2.10 per Mcf.

Q. What was the commodity charge as opposed to the 20 cents?

MR. COATES: It was 20 cents.

Q. And what was the minimum annual load factor?

MR. COATES: It was 75 per cent.

Q. And did it over the years increase?

MR. COATES: No sir. In fact, this price was the price for only the first five years with the necessity of re-negotiation of price at the end of

that 5-year period.

Q. So the contract was not as good a one as the present one with Mid-West?

MR. COATES: Well, at the time we concluded -- we had some misgivings about re-negotiating the price because of the difficulty in arriving at the contract price with Northern. We were not real sure we would be able to get 2.10 -- 20 cents -- in a re-negotiation. I might say also since we are talking about that price that it became quite obvious that Trans-Canada in April of 1955, in order to get a further extension to this letter of agreement with Northern Natural, there would have to be a re-negotiation of price before they would be willing to commit themselves beyond the April 30th deadline.

Q. Is Mr. Tanner here today?

MR. COATES: Yes, sir.

Q. Mr. Tanner, I have in my possession a copy of a telegram sent on June 2nd from Omaha, Nebraska, June 2, 1955, to you as president of Trans-Canada at Calgary, and purporting to be signed by Northern Natural Gas Company, J. F. Merriam, president. Was Mr. Merriam president of the Northern Natural Gas at that time?

MR. TANNER: Yes, he was.

Q. Now, the date is highly significant and I want you to bear the date in mind. He starts off by saying:

"I am advised that in spite of my several "telephone conversations with you and the several "owners of Trans-Canada Pipe Lines Limited that "Trans-Canada is continuing negotiations with "another pipe line for delivery of natural gas "to the United States in direct violation of "Trans-Canada's contractual obligation and "other commitments to Northern Natural Gas "Company.

"We expect Trans-Canada to live up to such "obligations and commitments to Northern Natural "Gas Company. I further expect you to live up "to the personal assurance you gave me at the "time of our Washington hearing that Trans- "Canada would not exercise any conditional "right it had to cancel this contract with "Northern for such period of time as was "occasioned by Trans-Canada's own failure to "perform."

Now, did you give such a personal commitment to Mr. Merriam?

MR. TANNER: No, I did not.

Q. Were you in fact in negotiation with Tennessee Transmission at this time?

MR. TANNER: At the time ---

Q. On June 2?

MR. TANNER: We had to arrange for an extension with the Transport Board for an extension and we

were not in negotiation with the company, with any company at the time. We had at that time realized it was going to be necessary for us to see what we could do about gas to supply our markets or to take care of -- to get new markets, if necessary.

Q. Well, it is significant that on the very next day, June 3rd, was the day you informed the interests that the contract with Northern was terminated. The letter I have is dated June 3, 1955, and it is addressed to Northern Natural Gas Company:

"Pursuant to and in accordance with "the provisions of clause 20 of the letter agree-"ment dated September 16, 1954 between Northern "Natural Gas Company and Trans-Canada Pipe "Lines Limited as amended by the letter agree-"ment between the two companies dated December "13, 1954, Trans-Canada Pipe Lines Limited here-"by gives the Northern Natural Gas Company "written notice of the election of Trans-Canada "Pipe Lines to terminate and hereby terminates "the said letter agreement dated September 16, "1954, as amended by the said letter agreement "dated December 13, 1954."

Now, Mr. Tanner, it is significant, I suggest, that that letter went out the day following the receipt of this telegram.

MR. TANNER: As Mr. Coates said in his answer to your questions a few minutes ago, it became

quite evident to us as a result of discussions with the Northern Natural that they were not prepared to extend the contract we had with them without a re-negotiation on price, and when that was evident we -- that was evident as a result of different discussions we had had with Northern Natural. There was, as I said before, a consideration of trying to get other markets because it was very important that we have a market when having our permit with the Transport Board extended. We had discussed with other people in different places the possibility of getting gas and Mr.Merriam, it seems, had information that we were discussing possibilities of getting gas but no negotiations or no contract had been worked out.

Q. In any event, you say the contract was not as desirable a one as your present contract with Mid-West?

MR. TANNER: I say the contract that we had with Mid-Western or with Northern Natural had, in order for us to go to the Transport Board -- we had to have a contract of some kind. We approached them and asked them to extend that contract and they refused to extend the contract without a re-negotiation on price. Now, if that answers your question. The assumption was that the contract would not be as good as it then was.

THE CHAIRMAN: In other words, they wanted

a lower price?

MR. TANNER: Yes.

MR. PATTILLO: Q. And they thought they had you over the barrel because you had to have a contract to get an extension?

MR. TANNER: We felt it was very important that we get this extension or some other firm.

MR. COATES: Mr. Pattillo, could I make one comment there in connection with our negotiation on price? In the Northern contract Trans-Canada had appeared before the FPC as a supporting witness for the Northern Natural application for gas at Emerson and in those proceedings before the FPC five of the large customers of Northern Natural who proposed to buy additional gas from them and had so given them notice opposed very strenuously the importation of this Canadian gas. They made a statement that you will find on the records of the FPC that they did not want any of this gold-plated Canadian gas that had been contracted for. That gave rise to our belief that Northern, to continue this contract, would insist on some price less than the contract price that then existed so it would no longer be gold-plated Canadian gas.

THE CHAIRMAN: It is copper-plated?

MR. PATTILLO: I notice the time, Mr. Chairman, and I think that covers everything that I want to question these witnesses about. The reason

I am saying that is that Mr. Stewart wants to get away and I have told him that he could go. Mr. Stewart is the geologist who has given us the reserve figures and I have no further questions I want to direct to him and if any of the members of the Commission want to speak about reserves with Mr. Stewart perhaps we should do that now. As far as the other witnesses are concerned we will have this further exhibit tomorrow and of course I want to question Mr. Atkinson in the light of what we have now found out, and I imagine many of you have questions that you want to address to this gentleman.

THE CHAIRMAN: There was one question on the reserves, just while we have Mr. Stewart here.

MR. McNEILL: Mr. Chairman, may I say at this time that it is not a question of Mr.Stewart's desire to go, he has a commitment to appear before the Board of Transport Commissioners in connection with another application and he has to be in Ottawa tomorrow. Mr. Horte will be available.

GG

THE CHAIRMAN: Mr. Stewart, have you heard the evidence given to the Commission, or read the evidence given to the Commission with respect to Alberta's gas reserves by the Oil and Gas Conservation Board?

MR. STEWART, Jr.: Yes, I have. I did hear it.

THE CHAIRMAN: Have you heard or read the evidence given to the Commission by the Canadian Petroleum Association with respect to overall reserves as distinct from just Alberta?

MR. STEWART, Jr.: No, sir, not directly; just hearsay.

THE CHAIRMAN: Have you, for Trans-Canada, made any estimate of proven and probable reserves in Alberta?

MR. STEWART, Jr.: Yes, I have.

THE CHAIRMAN: What is your view as to the estimates?

MR. STEWART, Jr.: I have made a preliminary estimate as of January 1st, 1958 of the presently proved and probable reserves in Alberta. Maybe I had better qualify this: my company has and I have, over the past six years, made several estimates of the reserves of the Province of Alberta in connection with our work for Trans-Canada. On two occasions, one in 1951 and again in 1953, if I recall, we presented those estimates in hearings before the

Oil and Gas Conservation Board of the Province of Alberta. Our last detailed estimate for the Province, that is, by making a relatively detailed study of each field and each reservoir in the Province of Alberta, and independent from the Board's estimate, was as of July, 1956, and at that time we estimated the proved reserves in the Province to be 15.6 trillion, and the proved plus probable approximately 20.5 trillion, if I recall those figures. Based on a preliminary review of developments since July, 1956 to the present time, I estimate that the presently proved reserves in Alberta are in the order of 18 trillion cubic feet, and that the proved plus probable are between 23 and 24 trillion cubic feet.

THE CHAIRMAN: Is Trans-Canada in possession of your estimates?

MR. STEWART, Jr.: They have been advised of it, yes. This is not a formal report that has been submitted, of any kind.

THE CHAIRMAN: I see.

MR. STEWART, Jr.: This is just a revision of the July, 1956 figures. It is based on incomplete information. Some of these new fields are just being developed, and that information has been held confidential, at least in part. So, at this time, with what I have had available, it has been impossible to make a detailed review of all the

new developments, and we haven't done so; but, in my judgment, the proved reserves as of the first of 1958 are in the order of 18 trillion. In other words, if I did make a detailed estimate I would be within, oh, 5 per cent of that figure; I think that would be right.

THE CHAIRMAN: Thank you very much.

I have no further questions to ask about reserves, Mr. Pattillo. Everybody else, I take it, with the exception of Mr. Stewart, will be here tomorrow? Mr. McNeill will be here?

MR. McNEILL: Yes, I will be here.

THE CHAIRMAN: Because, obviously, we have not yet finished.

MR. McNEILL: It is possible we may have odd ones in and out tomorrow because we have a Conservation Board hearing, and we are going to have to divide our forces to some extent.

THE CHAIRMAN: On behalf of the Commission I want to express our appreciation to Mr. Stewart, Mr. Tippy, Mr. Coates, and all the others of you and your staff who have worked long hours to help us. We realize you have worked hard and late hours, and when a situation develops that you cannot get something copied, and it is going to throw more hardship on the staff, please tell us, because we don't want to press you unless it is absolutely essential.

MR. STEWART, Jr.: Thank you very much, sir; we have enjoyed it too.

THE CHAIRMAN: We will adjourn now until 9.45 tomorrow morning.

---Whereupon the hearing adjourned at 4.40 p.m. until 9.45 a.m. on Tuesday, February 25th, 1958.

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ROYAL COMMISSION

ON

ENERGY

HEARINGS

HELD AT

CALGARY,

ALTA.

VOLUME No.: 17

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ROYAL COMMISSION
ON
ENERGY

Hearings held at Calgary, commencing Monday, February 3, 1958, at 10.00 A.M.

PRESENT:

Mr. H. Borden, C.M.G., Q.C.	-	Chairman
Mr. J.L. Levesque,	-	Member
Mr. G.E. Britnell,	-	Member
Mr. G.G. Cushing,	-	Member
Dr. R.D. Howland,	-	Member
Mr. L.J. Ladner, Q.C.	-	Member
Dr. R.M. Hardy,	-	Member

COMMISSION COUNSEL:

Mr. A.S. Pattillo, Q.C.

Mr. Miles H. Patterson.

Mr. J.F. Parkinson	--	Secretary to the Commission.
Major N. Lafrance	--	Assistant Secretary to the Commission.

APPEARANCES:

Representing Trans-Canada Pipe Lines Limited (conclusion):

Mr. N.J. McNeill	- Counsel
Mr. F.P. Layton	- Associate Counsel
Mr. Charles S. Coates	- President
Mr. William B. Tippy	- President of Commonwealth Services Inc.
Mr. H. Dix Fowler	- Vice-President
Mr. R.C. Berry	- Vice-President and Treasurer
Mr. Ralph S. Orme	- Natural Gas Consultant, Commonwealth Services Inc.
Mr. V.L. Horte	- Chief Gas Supply Engineer.
Mr. N.E. Tanner	- Chairman of the Board
Mr. D.H. Atkinson	- Chairman, Finance Committee.

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Trans-Canada Pipe Lines (cont'd)

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APPEARANCES:

Representing The Corporation of the City of Edmonton:

His Worship Mayor W. Hawrelak

Mr. J.M. Tweddle	-	Commissioner
Mr. D.B. Menzies	-	Commissioner
Mr. Alan Macdonald	-	City Solicitor

- - - - -

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Tuesday,
February 25, 1958.

---On resuming at 9.45 a.m.

---Mr. Commissioner Cushing was not present.

THE CHAIRMAN: Gentlemen, the Commission will now resume its hearing.

Mr. Pattillo?

MR. PATTILLO: Thank you, Mr. Chairman.

Q. There was a question I asked you, yesterday, Mr. Orme, which you were unable to answer at the time. If you could tell us now as to what percentage of the industrial market that you forecast for five years was under contract. You said you were not able to tell us exactly that you would look into your records and see what you could come up with.

MR. ORME: That was just called to my attention, Mr. Pattillo, and I was not able to make the computation, but if you will wait a little longer, I will work it out.

Q. Thank you very much.

Now, Mr. Coates, in connection with this Emerson contract, I think the company has some letters from the former Minister, the Honourable C.D. Howe, which have been referred to from time to time at the hearings of the F.P.C., and I would like to have those read into the record.

MR. McNEILL: Mr. Pattillo, I have been making a search to see if we have those letters with us, or a copy, and with all the material we have with us, we do not have a copy of those letters which are dated September, 1955.

Q. Would that be because the company places no reliance upon them?

MR. McNEILL: No, sir; it has nothing whatever to do with that. It is because they are locked up very safely.

Q. Perhaps you would file those subsequently, Mr. McNeill, and if I might ask Mr. Coates one or two questions regarding the letters which, I suppose, are very familiar to you, Mr. Coates?

MR. COATES: Yes, sir, they are.

Q. What, in essence, is contained in the letters?

MR. COATES: In essence, the letters state that after action is taken by the Federal Power Commission in the United States, that the Government of Canada would undertake to take action in connection with the issuance of a permit from Canada.

Q. Am I clear, then, as a preliminary to any consideration by the Government of Canada, there must be some action taken by the F.P.C. in the United States?

MR. COATES: Yes, sir, that is correct.

Q. And am I clear, if there is action taken

by the F.P.C. and a permit to import is granted to Midwest, then the Government of Canada has agreed to review the matter and make a decision?

MR. COATES: Yes, sir, that is correct.

Q. But the Government of Canada has not committed itself in advance as to what its position is going to be?

MR. COATES: No, sir, it did not.

Q. Now, if I might ask you a few questions, Mr. Coates, as to Mr. Milner's letter. Will you place it in front of you?

MR. COATES: Yes, sir.

Q. I am referring to the second paragraph on page 1 where he says: "As far as I am concerned, there was every advantage in making an alliance with Pacific Gas and Electric which conceded the prior rights of the Canadian market rather than with the group, also American-dominated, which is obviously endeavouring to obtain a monopoly of the gas on the Canadian-American Pacific Coast and the States and Provinces immediately to the east. Trans-Canada, it seems to me, should have adopted the same attitude."

Now, am I correct in thinking what he is talking about there is Tennessee Gas, El Paso and Pacific Northwest?

MR. COATES: No, sir, I would not say that is correct.

Q. Well, Tennessee Gas Transmission is not operating in the Pacific Coast market in the United States, is it?

MR. COATES: No, sir.

Q. So when he is talking about a group "which is obviously endeavouring to obtain a monopoly of the gas on the Canada-American Pacific Coast", he can only be talking about ---

MR. COATES: I would say he is talking about Westcoast and its contractual arrangements with Pacific Northwest and Pacific Northwest and their connection with El Paso Natural Gas Company.

Q. Then, when he goes on to say, "obtaining a monopoly in the States and Provinces immediately to the east", he is talking about Tennessee Gas?

MR. COATES: I do not know, sir, whether he is talking about Tennessee Gas or whether he is talking -- I believe Pacific Northwest Pipeline proposed to served some Pacific Coast States; Westcoast proposed to serve Pacific Coast Provinces in Canada. Pacific Northwest also proposed to serve directly to the east of the Pacific Coast States such as Utah, Idaho -- whether or not they had any sales in Montana, I do not know, but they do go down to Colorado and Nevada.

Q. As a result of your former connections with Tennessee Gas, do you know whether there is any

association, direct or indirect, between El Paso and Tennessee Gas?

MR. COATES: No, sir, there is no such connection -- since I resigned my position in August, 1954 there has been no connection -- there was a connection prior to that time, and I am reasonably sure there is not at this time.

Q. So far as Trans-Canada is concerned, has there been any association, direct or indirect, between it or any of its officers with Westcoast Transmission?

MR. COATES: None that I know of, sir.

Q. Or with El Paso or Pacific Northwest?

MR. COATES: No, sir.

Q. What construction did you put on this phrase in Mr. Milner's letter?

MR. COATES: It is my belief that Mr. Milner was suggesting to Trans-Canada that they ally themselves with the Alberta and Southern and Pacific Gas and Electric Company projects and fight vigorously against the Westcoast project, and support the project going south from Alberta to California. When I say "support", not necessarily active support, but in fair time when such a thing should come to pass.

Q. I refer you to the last sentence in page 1 of the letter: "In my opinion, as I have frequently stated, the advantages of the Tennessee

contract must be determined on the assumption that we will pay for gas delivered to it, four or five cents more than is now being paid for gas which, in my opinion, has been dedicated to the Canadian market."

Had Mr. Milner frequently expressed that point of view to you and other directors of the company?

MR. COATES: No, sir, I do not think frequently referred to the price. Mr. Milner was aware of the price we felt we could pay for gas; he was also aware what Alberta and Southern was offering for gas; he was aware of the fact Alberta and Southern was not paying four or five cents more than Trans-Canada was; he was also aware that the prices that were being paid were similar with the prices that have been offered. We have not been very successful in paying it.

Q. You were successful, so far as the Carbon field was concerned until you withdrew the contracts before they had a chance to sign them?

MR. COATES: That is a very special case, Mr. Pattillo.

Q. Perhaps you would explain that to us?

MR. COATES: Sir, in an attempt to co-operate with the local utility company and Canadian Western Gas Company, we had agreed some months ago that if Tennessee Gas, from whom we were buying the

Carbon field would replace that gas to us in some other area that would be equally valuable to us, then we would make an exchange and would, so to speak, get out of the Carbon field because the local utility was anxious to have that field to use in connection with their service to Calgary, first, to meet winter peak loads and later, if the field was depleted somewhat, to use it in connection with storage fields further to meet peak requirements of the City.

Q. Did Tennessee Gas make that exchange?

MR. COATES: Well, the discussions carried on for some months and during the time it was carrying on and since, we had not been able to obtain a satisfactory exchange. This new group to whom you refer we offered contracts, wrote to us saying that they had gas in that field also and, inasmuch as we had a contract with Tennessee Gas and would be taking gas from the field, they would like to discuss the contract with us. During the time that the discussion of contract was going on with Western Leaseholds and its associates, we were able to consummate the exchange with Tennessee where we had no contract in the field, thus framing the possibility for the use by Western Canadian Gas Company and,to co-operate with them, withdrew from negotiations with Western Leaseholds and its associates.

Q. In fact, Western Leaseholds and its

[illegible]

associates had signed contracts ready for signature, did they not?

MR. COATES: No, sir, they did not.

Q. Did they not have draft contracts?

MR. COATES: They had draft contracts, sir. There were discussions going on between them -- for our gas supply with respect to certain provisions, certain changes that had not been agreed to by us, nor had they been agreed to by them.

Q. Mr. Coates, would you say the result of your withdrawal from the Carbon field is going to result in a detriment to the producers of the Carbon field?

MR. COATES: No, sir I don't believe that it will. It is my understanding that Canadian Western is very anxious to purchase gas in the field.

Q. On the same directions as you are proposing?

MR. COATES: I do not know what they are.

MR. McNEILL: Mr. Chairman, I realize that this is not a court and this is not a place where a person objects to questions but the Alberta Oil and Gas Conservation Board commenced its sittings this morning in connection with the Carbon field. I think we have been entirely frank in what we have done in connection with it and if Mr. Pattillo has other questions of Mr. Coates I would have no hesitation in having Mr. Coates answering questions of fact on the Carbon field. I do think it is entirely unfair because we are in business, we have to operate before and under the jurisdiction of the Oil and Gas Conservatinn Board to ask Mr. Coates to draw a conclusion as to what is right or wrong, in effect to say up here while the Conservation Board is sitting in the court house deciding the answer to that very question, I think is manifestly unfair to Trans-Canada. I can quite see the

Calgary Herald and Calgary Albertan in their next issues setting up any differences that might come up in this hearing from Mr. Coates, with the deliberations of the Conservation Board.

THE CHAIRMAN: I doubt very much if that is Mr. Pattillo's object. All we are concerned with, Mr. McNeill, is getting the facts and in getting the facts before this Commission could not possibly prejudice.

MR. McNEILL: The facts as they pertain to Trans-Canada or in Trans-Canada is knowledge and we are perfectly willing to answer anything of that description. I think we have answered, and if there is anything more we would be pleased to add. It is only a question of conclusions.

THE CHAIRMAN: I think Mr. Pattillo will agree with you. I agree with you and I think the Commission agree that we would like to get the facts.

MR. PATTILLO: That is as far as I was going to go, anyway, but I think I should make it clear what I had in mind: Mr. Coates had said that they were having difficulty in getting contracts and the question was in my mind whether the price was going to have to go up to get the contracts or whether, and I say this with some diffidence, you really were going to have people make arrangements amongst themselves that were going to be to the detriment of the producers.

MR. COATES: Well, Mr. Pattillo, the only thing I can say further to that, as far as the Carbon field is concerned I believe that Trans-Canada -- and I have been told by my legal counsel -- are bound by the laws of Alberta to protect the users of gas in Alberta. The Conservation Board has the authority to so correct us, to protect the user of gas in Alberta and our permit from the Conservation Board so provides.

Q. I could not agree more but until the Alberta Conservation Board makes the decision that the Carbon field is for the benefit of the people of Alberta I am concerned as to prior arrangements made without the protection of the Conservation Board.

MR. COATES: Well, we hope that in the Carbon area if the Conservatinn Board decided against it being used in Alberta that we could consummate some arrangements that were being negotiated.

THE CHAIRMAN: Matters have just been held in abeyance, is that what you mean?

MR. COATES: Yes, sir. We would like to go back to the field and attempt to purchase gas from it if the Conservation Board decides it is not in the best interest of Calgary to have.

MR. PATTILLO: Q. On page 2 of Mr. Milner's letter, in the price comparison statement

forwarded to him from Mr. McNeill under date of the 18th of November it appears that for the first three years the price per Mcf to be paid by Mid-Western gas is 28.06 cents, and the price to be paid in the Manitoba zone is 28.33 cents. In the next two years the corresponding figures are 27.07 cents and 24.58 cents. In the second five years they are 28.09 cents and 24.58 cents. The advantage to the Manitoba zone would be more than offset during these first ten years, at least, by the increased prices you will be paying for the Tennessee gas.

Mr. Coates, what I wanted to ask, is that a true statement?

MR. COATES: Sir, yesterday we put evidence in in connection with the cost of doing business with Tennessee and the service to be rendered and the terms that we have made with the assumption that we could buy gas at the price that is now being offered. Obviously if we had to pay more than the price that is now being offered for gas to service our contract it would have some difference in the ability to earn in connection therewith. It, of course, would not change the prices for the selling, that is the selling prices.

Q. These prices that are mentioned in this letter are a combination of the demand price and the commodity price?

MR. COATES: Yes, sir. I think you will find they correspond with figures that have been placed in the record.

MR. McNEILL: I think I might clarify that, Mr. Pattillo. The price in the comparison statement referred to by Mr. Milner is the one we have submitted to this Commission, the first sheet under Tab C. It is exactly the same tabulation.

Q. Thank you. Now, Mr. Coates, if Mr. Orme's calculations of the first five years are applied to the Trans-Canada present system, that is if we assume the increase that he has put in his 5-year calculations and find it flattens out at the end of the 5 years and remains the same, will the present facilities which are either built or are in the process of being constructed be adequate?

MR. COATES: Yes, sir.

Q. They will be adequate?

MR. COATES: Yes, sir.

Q. And they would still be adequate if you had the Emerson contract, is that right?

MR. COATES: Yes, they could be made to be adequate.

Q. Now, if Mr. Orme's other calculations as to the market in the next 30 years are taken into consideration are the present facilities adequate?

MR. COATES: Not to meet the 30-year figure.

Q. And what would you have to do in your opinion to be able to meet that 30-year forecast?

MR. COATES: Well, we would obviously have to complete the present pipe line that is being constructed, compressors, looping and additional pipe lines. Just how many lines would be required I am not in a position to say right at this time but it would require additional facilities.

Q. With his forecast of the five years will looping be necessary or will it be merely a matter of compressors?

MR. COATES: I believe some looping would be necessary, Mr. Pattillo.

Q. Have you had any of your people do any calculations as to approximately how much looping will be necessary and what the cost would be?

MR. COATES: Only some very rough estimates. I might ask Mr. Tippy to discuss that. He has been in contact with some of our engineers who have been working on that.

MR. TIPPY: Mr. Pattillo, we have not yet had a study of the cost of construction of the program to meet Mr. Orme's forecast even during the first five years, but we have taken a look with this in mind, that as Mr. Stewart stated yesterday increments to the pipe line will probably come in layers, so to speak. I believe he mentioned the first layer

as being something like 1.2 trillion cubic feet for Canadian markets and I believe that came -- just a moment, I have a piece of paper that I think might help -- in the construction which would actually come in 1961. it would add about 190 million cubic feet per day capacity to the line and a probably coarse estimate is that they will probably be a cost of around $105 million, a small portion of which could be covered by cash generated in the company with $100 million financed at that time.

Then, there would be a second layer of 1.3 trillion cubic feet for which the construction, assuming the permits are granted in proper time, would come in 1963 and that would add another 150 million cubic feet per day of throughput capacity to the line and might cost in the order of $85 million of which $80 million perhaps would be new financing.

That is some measure of it. It is the best we have until an actual study can be made which would take some time.

Q. Now, did the original financing of last year cover the contemplated line from the main line to Emerson?

MR. COATES: No, sir, it did not.

Q. And how much do you estimate roughly that line would cost?

MR. TIPPY: Mr. Pattillo, the financing last year covered the program as set forth in the

finance report of February, 1957 and all the financing assumed in that report,all but about $5 million,was actually accomplished at the time of the financing. This year the construction program has been accelerated somewhat by additional pressures being installed in 1958 which are scheduled for later years, so there is about $3 million involved there or a total perhaps of $10 million of new financing of one sort or another, for this year.

Now, if Emerson were to be certificated and the two trillion feet permit granted in adequate time to commence the sale at Emerson at November 1, 1959, there would be a further 1959 requirement for financing on the order of $30 million.

Q. So to sum it up, you need $10 million this year: if Emerson comes in you need another $30 million next year. If this market forecast of Mr. Orme's in five years is realistic you will need to cover that in two layers, approximately $180 million?

MR. COATES: That is correct.

Q. That is fine, thank you.

Now, may I have Mr. Atkinson?

MR. COATES: Before we leave Mr. Milner's letter could I say one other thing in connection with it?

Q. Certainly.

MR. COATES: Mr. Milner was a director of

Trans-Canada at the time an extension was given to Mid-Western at the prices that now appear in the contract. He had indicated his willingness for an extension if we could obtain from Mid-Western the approximately 2-cent increase in price that we were successful in obtaining, with a further one cent if Mid-Western did not obtain a permit from the FPC on November 1st, 1958.

THE CHAIRMAN: I would like to ask Mr. Coates a question before you call Mr. Atkinson.

The date of Mr. Milner's resignation was what?

MR. McNEILL: December 14, 1957.

THE CHAIRMAN: The January 23rd date was the date on which he was replaced on the Board?

MR. McNEILL: No, that was the first directors' meeting after December 14. In other words, that was the meeting at which the letter of resignation was received and was accepted.

THE CHAIRMAN: Formally received by the directors?

MR. McNEILL: That is right.

THE CHAIRMAN: But his letter itself was a plain letter of resignation addressed to Mr. Tanner, was it not?

MR. McNEILL: That is right.

MR. COATES: That is right and it was dated December 14, 1957.

[illegible]

THE CHAIRMAN: Was that letter acknowledged or answered by the company? We have had the letter but we have not had any indication that the statements in it were in any way disputed by the company in writing.

MR. McNEILL: I am not under oath, Mr. Chairman, but I was instructed as secretary of the company, at the January 23rd directors' meeting, to acknowledge receipt of Mr. Milner's letter of December 14th and to advise him that the directors had, with sincere regret, agreed to accept his resignation, which they had done. Further I was directed to advise him that our directors had noted his views as set out in that letter.

MR. PATTILLO: Including the jaundiced eye?

MR. McNEILL: I made no reference to any specific item other than his views had been noted and the only other item in the letter, to my recollection, was that I added some personal reference myself.

THE CHAIRMAN: You had no instructions from the company to endeavour to justify the company's policy, using Mr. Milner's expression of a contrary view?

MR. McNEILL: No, sir.

THE CHAIRMAN: Thank you.

C

MR. PATTILLO: Can we have Mr. Atkinson sworn?

D.H. ATKINSON, sworn.

BY MR. PATTILLO:

Q. Mr. Atkinson, you are a director of Trans-Canada Pipe Lines?

A. Yes, sir.

Q. You joined the Board, I think, some time in 1956?

A. Early July, as I remember.

Q. And from the time you joined the Board up until now you have been the head of the finance committee of the Board?

A. General finance committee, yes, I believe.

Q. Now, I would ask you, Mr. Atkinson, if you would refer to the prospectus that was issued under date of February 13, 1957 and particularly to page 28. I am referring to the first complete paragraph that commences on that page:

"The mortgage will provide that after com-
"pletion of the initial pipeline system,
"additional bonds may be issued from time
"to time against the acquisition by the com-
"pany of the Northern Ontario section from
"the Crown Corporation to the extent of

"100 per cent of the net bondable value "of the property so acquired, less an "amount in lieu of depreciation accrued "after the date of acquisition by the "company of the Northern Ontario section, "but not in excess of $120 million. If "such issuance will not cause the total "principal amount of bonds and purchase "money obligation then outstanding to ex- "ceed 70 per cent of the company's total "capitalization, as defined, and if the "company's earnings show a required re- "lationship on a proforma basis to its "interest and sinking fund obligations, "additional bonds may also be issued after "completion of the initial payment from "time to time in an amount equal to 60 per "cent of the net bondable value of other "property additions, which may include oil "and gas-producing properties up to a limit "of $25 million, subject to the same require- "ments as to capitalization and earning ratios."

Now, Mr. Atkinson, you have heard the evidence as to the capital additions that would be required in the forthcoming years, namely, $10 million this year, $30 million to build the extension to Emerson and approximately $180 million for the whole line if the calculations of Mr. Orme as to the market for the next 5

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[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

years are realistic.

Has the finance committee of the company given any consideration to how these monies are to be raised, in the light of the paragraph which I have just read?

A. Well, Mr. Pattillo, quite obviously there is in existence no exact plan of finance. We have, amongst ourselves, frequently talked as to what could be done. I think it is safe to say that it would be the intention to recommend to the directors that, to the extent permissible by these paragraphs and the restrictions mentioned therein, that any additional finance should be done by way of additional first mortgage bonds, of course, always provided that the money markets are, at the proper time, sufficiently receptive to make that possible. The balance of any money required might take several forms, as you know. It might be done by way of debentures, either straight, convertible or with warrants attached; it might be done partially by preferred stock or even done partially by common stock.

I think the decision would have to be made in the light of the circumstances at the time of financing as to which type of instrument would (a) be the most saleable and (b) the most advantageous to the company.

Q. You agree with me, do you not, that this restriction on only being permitted to issue

bonds to the extent of 60 per cent of the net capital additions is pretty onerous?

A. It is onerous, yes.

Q. For instance, in the case of the Interprovincial Pipeline Company, the percentage is 80 per cent, is it not?

A. I am not familiar with that but I am not at all surprised to know.

Q. Why was the limit of 60 per cent put on here? Do you know?

A. I do not know. I believe it was stipulated by the Metropolitan Life Insurance Company, who were, as you know, large purchasers of our original issue.

Perhaps Mr. Tippy would like to answer that.

MR. TIPPY: I would like to add just this, Mr. Pattillo, that the utility type mortgages in the United States -- I am speaking now of chiefly one having to do with distribution utilities in the larger companies -- quite commonly have the 60 per cent clause.

It is a common practice, certainly in the generating utility business in the United States, where there are some pipeline companies that have 75 per cent, the 75 per cent clause in them, so, while this is more burdensome than most of the pipeline company mortgages in the United States, it is in line with what somebody told me they are faced with there.

Q. In connection with the purchase, Mr. Atkinson, in the future, of this section of the line presently owned by the Crown, am I correct in thinking that you are entitled to issue bonds for the full capital amount of that, provided, however, that the issue with the bonds outstanding does not exceed 70 per cent of the assets of the company over and above the liabilities?

A. That is the way I read this restriction.

Q. And do you agree that, in the light of the contract with the Crown regarding the proposed purchase of that section of the line, it is most desirable that the line be purchased before the amount is no longer a depreciable amount?

A. Oh, very definitely.

Q. And do you agree, therefore, that with this restriction that exists there, it is most desirable that the company have an option that brings in as many dollars in revenue as possible?

A. Oh, yes.

Q. In other words, is the Emerson contract in any way an essential to get around this requirement?

A. I hesitate to make a blanket reply to that, Mr. Pattillo. I simply don't know. I would say in my judgment it certainly would be advantageous; but to say it is essential, I would have to have a

little more advice from people who know more about the technicalities than I do.

Q. Let me put it this way: has the finance committee at any time considered the difficulties of meeting these requirements in the future for the acquisition of that Crown section of the line, with or without the Emerson contract?

A. No, I can't say we have considered it in the light of what you have said at all, Mr. Pattillo.

THE CHAIRMAN: Has the whole of the financing been set up on the basis of the Emerson contract?

A. Pardon me, sir?

THE CHAIRMAN: Has the whole of the financing of the Trans-Canada been set up and established on the basis of there being in existence an export permit and the Emerson contract?

A. On the contrary, sir, this whole scheme of finance was based on Canada only, and Emerson, at the time of finance, was not a probability nor was it considered in relation to the financing of this Canadian company. That is, in my judgment.

MR. PATTILLO: Q. So far as you were concerned, as the Chairman of the finance committee, having to recommend the approval of this scheme to the Board, you didn't consider the Emerson contract at all?

A. On the contrary, we simply had to

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consider Emerson as out.

Q. As out?

A. As not existing.

MR. TIPPY: May I add one more word, Mr. Pattillo? The whole study on which the financing was based, which Commonwealth Services made, was premised on the fact that the Emerson sale could not be counted in determining whether the project was financeable. We made reference to it only briefly in a sort of appended paragraph in a report as being a plus item which could improve the picture, but we had to prove to the financial people, I mean the bond purchasers, that the project would go without Emerson in order to do the initial financing.

Q. You agree, Mr. Atkinson, that the Emerson contract, if it was permitted, with the load factor and the revenues anticipated from it, would make it much easier for the company to meet these requirements to which I have referred in page 28 of the prospectus?

A. They would make them infinitely easier to meet and finance, in my judgment.

THE CHAIRMAN: But, not having the Emerson contract, had the Emerson contract never materialized, the financial stability of Trans-Canada Pipe Lines would not be jeopardized?

A. I would say that is correct, sir.

THE CHAIRMAN: Well, it must follow, if you

laid your whole basis of financing on the exclusion of the Emerson contract.

A. The operation, in my judgment, was fully solvent without Emerson, otherwise we wouldn't have been able to finance it.

THE CHAIRMAN: And if the Emerson contract materializes, it will be a distinct advantage in purchasing from the Crown the section that was paid for by the Crown and now leased to the company?

A. I would say very much so, yes, sir.

MR. PATTILLO: I think those are all the questions I wish to ask of these witnesses from the company. I understand that Mr. Orme will give me that calculation which he has.

THE CHAIRMAN: Well, I would like to ask Mr. Atkinson another question:

We are only now on one of the 5-year plateaus. It seems to me that this forecast made by Mr. Orme, if it ever were to materialize even in part, and discounting it 40 per cent if you like, is going to involve financing of hundreds of millions of dollars over the course of the next 10 or 15 years in order to enable Trans-Canada to meet that demand, is it not?

A. I have not attempted to work it out, but, quite obviously, it would involve very material financing; but I don't think that would be a problem. In a growing corporation, presumably if this forecast

in the first 5-year level proves up, then the history must warrant the money that was spent and the money that would be spent for the enlargement of facilities.

THE CHAIRMAN: But I think the point Mr. Pattillo is getting at, as I understand it from him and from reading the restrictions is that you are severely restricted, from the point of view of the future, in raising these huge sums of money that may be required over the next 10 years, and presumably there are provisions in the indenture for changing the provisions of the indenture and, unless these were resorted to, I do not know how you could raise it.

A. The restrictions apply to first mortgage bonds. It would mean the sale of substantial amounts of other debentures in the form of other stock or combinations.

THE CHAIRMAN: But you are faced with a tremendous problem of financing, I would think.

A. At the moment, we have a little leeway in that our ratio is only 50 per cent, so that the purchase of the Crown Corporation does not represent quite the problem it might had we started off with a ratio of 60 per cent; but your question regarding the future, from a 5-year period, yes, it would be easier were the ratios higher. I would not say it would be impossible.

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[illegible]

[illegible]

[illegible]

THE CHAIRMAN: Let me get the other side, then, and ask you, Mr. Tippy:

You said that the custom among gas transmitting utilities in the United States, the pattern was more or less around 60 per cent as an average instead of the 70 per cent here.

MR. TIPPY: More like 75 per cent for the pipelines, sir, and more like 60 per cent for the distribution utilities.

THE CHAIRMAN: Yes, pardon me. I understand.

But the fact of the matter is that in the United States, during the past 15 years, the financial experience on gas transmission pipeline has been good?

MR. TIPPY: That is correct.

THE CHAIRMAN: And the financing, I think, would be considerably easier than it would be in Canada, is that correct?

MR. TIPPY: That is correct. In my opinion, sir, this particular financing had a number of difficult problems to solve, and I think the 60 per cent figure represents the valuation of the bond purchasers at the time, that this was not as simple a problem as might be faced in the United States, in a United States pipeline, without some of the complications in the picture.

THE CHAIRMAN: Quite, and as time goes on --

MR. TIPPY: This could be cured.

THE CHAIRMAN: But it might take quite a pattern of financing in the meantime?

MR. TIPPY: That is correct. I think there would have to be an experience record developed here, as indicated by Mr. Atkinson, before you could expect any change, and a lot of financing to do in the meantime.

I do not want to interrupt your train of thought, but before we get too far away from Emerson, I had a comment or two to make in that connection, if it is appropriate.

THE CHAIRMAN: I was going to make a comment or two, but you make yours first.

MR. TIPPY: I was going to say the evaluation of the worth of the sale at Emerson seemed to me to be something like this, that if the sale at Emerson is consummated beginning in 1959 it will advance the time when the Trans-Canada Pipe Lines gets into the black, so to speak, probably by about a year.

This, of course, means that the project will reach financial maturity, if you will, at an earlier date and will help get the earnings to the point where we can meet the test in the indenture which will permit us to buy the Crown Corporation.

I think the earlier that purchase can be made, the better it will be for all hands. Certainly

it has to be made, as Mr. Pattillo pointed out, sometime in the eighth year, where you get to the depreciated value -- that 70 per cent of the figure takes over and you are paying money to the Crown that you cannot recoup in the purchase.

As has been pointed out by Mr. Orme, with Mr. Pattillo carrying through this exhibit, the Emerson sale will reduce the system-wide cost of service for all sales which will develop to the pipeline as long as the rates stay as they now are and will help the pipeline get to work and earn a decent return sooner.

I have made a rough computation, and I can give the details later, but the short of it is that in the year 1959-60, with the addition of Emerson, it may increase the overall rate of return by about one-tenth of a per cent. In the year 1960-61, the addition of Emerson will increase the overall rate of return of the entire system by about two-tenths of a per cent, from 5.5 per cent to 5.7 per cent.

In the year 1961-62, it will advance the rate of return for the entire system from 5.75 per cent to 6 per cent, about one-quarter of a per cent; and in the final year we have shown the year 1962-63, where it will advance the rate of return from 5.5 per cent in that year to 5.7 per cent, or about two-tenths of a per cent.

Now, we have noted that the return at Emerson on cost of service alone -- based on allocation, rather, for this share of the entire facilities in the initial year was 7.2 per cent and, based on that general year, were 7.1, 7.3 and 6.7 in the remaining years, which is a considerably higher return than my computation indicates will be earned by the Canadian sales at the present contract rates.

My figures are 5.45 per cent in the year 1959-60; 5.5 per cent in the year 1960-61; 5.75 per cent in the year 1961-62 and 5.50 per cent in the year 1962-63.

So the sale at Emerson helps the system-wide cost of service and, with the present contract prices, it helps the return which the company will earn on its entire property.

The sale also permits, the consummation of the contract at Emerson also permits the consummation of the companion contract at Niagara, and I looked further, after our discussion on the record yesterday, at what some of these figures were and I was surprised to find, in the year about 1963, the Canadian sales alone are down to about a 90 per cent load factor and, under those circumstances, you could probably improve the load factor by at least 5 per cent with this sale at Niagara, so perhaps my valuation of it was a little hasty yesterday

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and it may be worth more than I gave it credit for.

So I think there are several things which are strong plusses for Trans-Canada in the Emerson sale.

THE CHAIRMAN: Thank you, Mr. Tippy.

Mr. Tippy, are you aware of the references to this Commission and the Order in Council appointing it?

MR. TIPPY: I have read what I believe to be the Order in Council. I was furnished a copy.

THE CHAIRMAN: I will read you this paragraph:

"To enquire into and make recommendations
"concerning (d) whether, in view of its
"special relationship to the Northern
"Ontario Pipeline Crown Corporation and
"the nature of its financing and control,
"any special measures need be taken in
"relation to Trans-Canada Pipe Lines Limited
"in order to safeguard the interests of
"Canadian producers or consumers of gas."

Now, let us address ourselves to that, for a moment. You said that the Emerson contract would enable Trans-Canada to purchase the bridge from the Crown Corporation sooner and that would be the best thing for everybody concerned?

MR. TIPPY: I believe that is correct.

THE CHAIRMAN: You mean it is better for

the shareholders, because they have -- you get to the point where you do not have to pay 70 per cent or, at least, might not suffer the penalty.

MR. TIPPY: Yes, and there is also another point prior to that, which has not been stressed much, which is a little harder to arrive at.

In the interval before that 70 per cent floor there are two alternatives, two alternative computations provided in the Crown agreement to determine what the price would be. There is a point where those two determinations, which start out at different prices, cross. When you get below the point where those two figures cross, some of the money being paid for rental is not credited towards the ultimate purchase of the Crown and the reduction of the value, and there is a point at which, given a certain throughput, there is advantage to buying the Crown section even ahead of the time when you reach the 70 per cent floor. But, clearly, when you do reach the 70 per cent floor, when you go beyond that point, you are doing a disservice to your stockholders, as you said.

THE CHAIRMAN: Well, I will go further and say it might be in the interests of the consumers and the purchasers of gas in Eastern Canada and the producers in Western Canada to have the company acquire that line before it has to pay that penalty?

MR. TIPPY: I think that is correct, sir.

My first statement, when I pointed out it was in the interests of everyone, was taking all things into consideration, considering all parties.

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THE CHAIRMAN: Why do you not develop that a little more for us? There might be those that would say that the interest of the Crown should remain there and Trans-Canada should have to pay for it, and the Emerson contract should make no difference. That would be one view, I suppose. I am not expressing any view of this Commission, do not misunderstand me, but I am trying to find out what the ramifications in this are.

Would it be true to say that the purchase in the fastest possible time and, in fact, the financing, Mr. Atkinson, would work to the benefit of the consumer in Eastern Canada through lowering the price and to the producer in Western Canada in enabling the company to pay higher prices, or, competitive prices; or would the sole benefit be that the equity shareholders in the Corporation would get the money that was saved?

Let us have a little discussion on it.

MR. TIPPY: As far as the cost of service is concerned, it is the part that would relate to the amount that could be paid for gas in Alberta or to the rates charged to the companies. The purchasing cost, say, in the east; the effect of the purchase of the Crown Corporation at a date ahead of the 70 per cent level actually has a slight effect, or, presumably would have a slight effect of increasing the cost of service a little bit.

This is by virtue of the fact the rate of interest considered in connection with the Crown section is rather a favourable rate of interest in the present market conditions as far as companies are concerned. I think one of the things I had in mind when we were saying it was an overall job, was my understanding of the original Crown concept, which was that this should, necessarily, be a temporary arrangement with the Government owning this piece of the line, and that the whole tenor of the provisions for payment of rental very clearly puts pressure, if you will, on Trans-Canada to make the transaction at an early date or be penalized, dollar-wise.

Therefore, I am assuming that the thought in the mind of the governmental people was to the effect that "We will enter into this Crown Corporation and finance this portion of the line, but the line should pay its own way", and the quicker the money is repaid the less problems there are in government spheres, so to speak, and I think that is better for everybody.

THE CHAIRMAN: Only in the sphere of government?

MR. COATES: I think it would also have the effect of reaching maturity and the symbolizing of reaching of maturity should have some effect, although that is something you cannot compute at this time, on Mr. Atkinson's ability to finance -- the

cost of the money to finance will have a definite bearing on the rates you have to charge and what you can pay the producers. I think it is all wrapped up together.

THE CHAIRMAN: Are you implying from that, if that cost of financing, in order to acquire the Northern Ontario Crown Corporation exceeded the annual cost you now pay by way of rental or otherwise to the Corporation, that the consumer, therefore, would get no benefit from the acquisition by Trans-Canada of that property?

MR. TIPPY: None immediately, if the facts are as you stated in your question, although I think it would have benefits far exceeding cost of service and, I think, in future financing, as long as you have the question of the Crown hanging over your mortgage and the question of when this takes place -- I am sure it is going to have an effect on Mr. Atkinson's ability to secure terms for the purpose of financing.

Mr. Coates has given me a note: one thing I neglected to state is as the line throughput increases to the east and the amounts put through the Crown section increases, the basic rental remains roughly 7.02¢. As those volumes can be shortly coming to a point where the amount of rental, probably, is out of proportion to the interest portion of this deal, and where the costs could come

down. I guess I had a particular date fairly early in mind, and I am sure under those larger volumes we are talking about putting through in connection with Mr. Orme's forecast, there will come a day when the purchase will not only be -- where the saving in the rental could well more than offset the additional interest I was talking to you about just now.

THE CHAIRMAN: That is what I thought.

MR. TIPPY: I am sorry, I must have gotten into a rut.

THE CHAIRMAN: I am just trying to get to the bottom of this; I am not expressing an opinion. The 7.02¢, if the Emerson contract does not materialize, your volumes will increase through the pipeline to the east.

MR. TIPPY: Yes, sir.

THE CHAIRMAN: So your rental will increase?

MR. TIPPY: Yes, sir.

THE CHAIRMAN: So it is distinctly of advantage to the company -- there comes a point very soon where it is distinctly to the advantage of the company to buy out the Crown Corporation so it does not have to pay that high rental?

MR. TIPPY: That is correct. The rental paid, in fact, comes to a higher figure than you paid the Crown and to finance publicly. There is certainly a point there.

THE CHAIRMAN: Does not that mean it would work to the benefit of the consumer of gas in Eastern Canada and, presumably, to the producer in Western Canada?

MR. TIPPY: Yes, sir; I am sorry I was so slow on that point.

THE CHAIRMAN: So you do not need the Emerson contract; all you need to do is some financing?

MR. TIPPY: I should say, while it will be adding materially increased sales and producing a better investment, but the various throughput, whether 7 per cent rental is paid or not, does not change the fact that Emerson would produce a full 4 or 5¢ per MCF saving over the years we have been looking at in the cost to producers.

THE CHAIRMAN: If we can go back to what Mr. Orme said yesterday, if we could have an adjustment of price every 4 years and this price at Emerson were slightly in excess of what it is today, then it would be a far better contract.

MR. TIPPY: Obviously.

THE CHAIRMAN: Both for your opportunity to buy at Northern Crown Corporation terms ---

MR. TIPPY: Yes, sir.

THE CHAIRMAN: -- and for the benefit of the consumer in Eastern Canada.

MR. TIPPY: Yes, sir.

THE CHAIRMAN: And the producer in the west.

MR. TIPPY: Yes, sir.

THE CHAIRMAN: And the shareholders.

MR. TIPPY: Yes, and the bondholder; his coverage would be better.

THE CHAIRMAN: His covering is pretty good now.

MR. ATKINSON: Right on that point I would like to say this: the purchase of the Crown Corporation would put us in a position of having a 70 per cent funded debt as over a 50 per cent at the moment which, normally, should have the effect of making your secondary securities worth more on the market. In view of the restrictions of only being advanced for capital expenditure to the extent of 60 per cent by first mortgage bonds, we will have to do a great deal of financing by way of some type of secondary securities, and the purchase of the Crown Corporation should make that type of financing easier and less expensive and, therefore, be increasing the net revenues of the company. It would also put the company in a position, indirectly if you will, to either pay more or charge less, in my judgment. It is not very direct from one point to the other but it must, of necessity, have some bearing.

THE CHAIRMAN: It seems to me, in my

mind, that runs a little contrary to the views we have had expressed before this Commission, Mr. Atkinson, that the 75 per cent funded debt, 25 per cent equity, was more to the benefit of the consumer than a 60-40 and, of course, to the equity holder, in due course.

MR. ATKINSON: This would bring us to 70-30.

THE CHAIRMAN: Fine; then I misunderstood the effect.

MR. ATKINSON: The purchase would enable us to go to a 70 per cent funded debt whereas, today, we are only 51 per cent or 52.

THE CHAIRMAN: That, I understand, in a short term works to the benefit of the consumer and in a long term to the benefit of the equity holder. I wonder if Mr. Orme would agree to that with his F.P.C. experience?

MR. ORME: I think that I would agree with that.

THE CHAIRMAN: You would agree with that, would you not?

MR. ORME: Yes.

THE CHAIRMAN: Well, I think I have pursued that far enough. I now have some thoughts on it.

Mr. Coates, could you tell us what the attitude of your company would be, and is, toward

some central regulatory authority in Canada with respect to gas transmission corporations?

MR. COATES: Sir, we have expected that such a body would materialize one day. I think governments have long since concluded they should regulate industries that service the public, such as the electrical industry and the gas industry, and because we have fully expected to have that sort of thing, we try to keep our records, as nearly as we can, on what we expect in the way of charging of accounts for public utility accounting. We tried to devise our rates on the basis of regulations being effected. We have attempted to set up our company with the expectation of a utility rate of return as will be established by the regulatory body. I have not been in the business quite as long as Mr. Kayser and Mr. Black in the States, but history will record, I think, that pipelines complained rather bitterly at the time F.P.C. was organized. I believe, over the time it has been in business, despite some of its lengthy deliberations and the cumbersomeness of the operation, it has been a benefit to the long line of transmission companies. As far as our company is concerned, we have expected, since its inception, there would be regulation.

THE CHAIRMAN: If there was regulation of some kind which is constitutional in this country, might that regulatory body not be able to be of

some assistance to Trans-Canada in the negotiation of contracts for the export of gas?
of contracts

MR. COATES: Yes, sir; I am quite sure they might lay down some rules that we could operate under that would be a little easier to operate under, rather than our trying to guess what is the proper thing to do.

THE CHAIRMAN: And the psychological effect might be good?

MR. COATES: Yes, sir, I think so. There is a regulatory body in the United States that says whether or not they can export gas to Canada or Mexico, and has set down rules under which export would be made. I think such a thing here would be helpful to us.

THE CHAIRMAN: And in the United States they would certainly fix the price; or, approve or disapprove of it.

MR. COATES: Yes, sir, they sure would. Perhaps Mr. Orme could help you.

MR. ORME: If I might, Mr. Chairman: technically and actually the Commission does not have any jurisdiction over the rate for gas exported under The Industrial Gas Act. However, in recommending to the President the issuance of a Presidential permit, they certainly take into consideration the price that is to be received for the gas and, I can assure you, if it is any less than what is being

paid for gas under comparable conditions of service, then your permit for export is delayed. They certainly would make no recommendation for issuance of a Presidential permit. So, while they do not bring a direct pressure, indirectly they do.

THE CHAIRMAN: I understand they look right back into the wellhead field price in Alberta. The fact is they do, in practice, as you say.

MR. COATES: In effect, it is the final decision.

THE CHAIRMAN: I think we might have a break there.

Mr. Coates, there is a question I would like to ask you when we reassemble. I will tell you what it is: would you tell the Commission your company's views with respect to a national policy in regard to the export of gas from Canada?

MR. COATES: Would you like me to answer that now, sir?

THE CHAIRMAN: No, I was going to give you a break.

---A short recess.

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MR. COATES: Sir, it is Trans-Canada's view with respect to the export of gas from Canada that an export should not be allowed just for the sake of export; that before an export should be allowed all the various problems that enter into the production of gas and the transmission of gas should be well explored, and that an export should be allowed only if it makes some contribution to the service to the Canadian consumers and producers.

I believe yesterday I spoke on reserves, and I do sincerely believe that it will be impossible to have a complete 30-year supply of gas in the ground to meet all possible market forcasts within Canada, and I further believe that it is necessary that the reserves that are available at the time of an application for export should be explored very thoroughly and completely by competent geologists, and that a trend of development based on past development trends and further possibilities as agreed on by expert geologists should all enter into the picture. It is quite obvious, of course, that it is necessary there be proved reserves to finance any facilities that may be built, and I think it is necessary that the gas companies take some basic risk on the trend of development to augment their supplies as the market does grow.

Does that answer your question, sir?

THE CHAIRMAN: Yes. I would like to ask

you one further question: what is your view with respect to these so-called markets in the United States for the export of gas from Canada and the risk of their being lost forever unless action is taken quickly, and all that sort of thing that we have been told and read about? I asked this question previously of Mr. Black, I believe.

MR. COATES: Well, sir, the markets that exist in the United States are seeking service, and if they do not obtain a supply of gas in Canada so that service can be rendered, I believe they will attempt, and probably be successful in obtaining supplies from other points. Then, if they do obtain supplies from other points, I believe the market growth in the areas that are under review will continue and that this is not the only social supply nor the only quantity that they will be seeking in the next several years.

It may be lost temporarily, but I cannot see it will be lost forever.

THE CHAIRMAN: In other words, you would subscribe, roughly, to the theory that there would be a continuing building up of markets in the United States for gas?

MR. COATES: Yes, within the areas we have been discussing here particularly, and that is, in the middle west of the United States which continues to grow, and the Pacific coast of the United States

which continues to grow. Does that answer your question?

THE CHAIRMAN: Yes. I take it that is all you care to say on the subject?

MR. COATES: Yes, sir, that is it.

MR. PATTILLO: Q. There is one question I omitted to ask, Mr. Coates: I don't know whether you or Mr. McNeill can answer this question. Has Trans-Canada or any officer of Trans-Canada or any director of Trans-Canada, to your knowledge, acquired any of the shares of any of its customers at other than market prices?

MR. McNEILL: I think perhaps, sir, we could best answer that on the basis of indicating that we will inquire into the matter. When you say "any of the directors; any of the officers" you are covering quite a long list. "Any customer" -- you are again covering a fairly long list, and it would take some little time to acquire that information for each individual.

We can certainly say, I believe, at this time -- both Mr. Coates and myself can say that we know of no instance where an officer or director of Trans-Canada, or Trans-Canada itself, have any shares in any customer company, or any other security of any customer company, that were bought other than on the open market, with one perhaps possible exception which is already on the record: if you consider Tennessee

Gas Transmission Company as a customer company, you have already heard from Mr. Coates concerning his shareholdings in the company, which occurred prior to the time he left the employment of that company.

If we find that I have not been correct in that broad statement, we would be allowed to amend our answer to that extent, and I take it it will not be necessary to disclose any shareholdings that exist which were simply purchased on the open market in the ordinary course?

Q. As far as I am concerned, I would not ask for any shareholdings bought on the open market.

THE CHAIRMAN: Thank you. Mr. Britnell, I believe you had a question.

MR. COMMISSIONER BRITNELL: I should like to refer first to the sentence which makes up the first full paragraph on page 19 of the submission made by Mr. Coates, C-19-2, and which reads: "We should point out that this proposed sale at Niagara is conditioned upon the commencement of the Emerson sale." I am still not perfectly clear why the two are tied together.

MR. McNEILL: May I point out, before Mr. Coates answers that, that there was an amendment to the submission when it was read which changed those words to "is conditioned upon the commencement and continuation of the Emerson sale". I believe it

was read that way.

MR. COMMISSIONER BRITNELL: Yes, that is right; I am sorry.

MR. McNEILL: If you would care to pass to another matter, I am seeking the actual words in the contract itself to hand to Mr. Coates.

MR. COMMISSIONER BRITNELL: Could I go on to my next question which is not related to the other? Referring to the various price schedules given in Exhibit C-24-5, is there any provision for re-negotiation of contract prices with the producers in any year or years under price schedule No. 1?

MR. COATES: Yes, sir, there is a provision for re-negotiation if the company should make a rate of return in excess of 7½ per cent prior to 1968. That would then cause a re-negotiation. If it does not earn in excess of 7½ per cent prior to 1968 there is an automatic re-negotiation of the price in that year.

MR. COMMISSIONER BRITNELL: Would the same apply to price schedule No. 2?

MR. COATES: Yes, sir, it applies to all schedules.

MR. COMMISSIONER BRITNELL: And schedule No. 3?

MR. COATES: Yes, sir.

MR. COMMISSIONER BRITNELL: Then, it would be fair to assume, would it, that any benefit to producers from Trans-Canada Pipe Lines buying out the Crown's section of the pipe line would accrue or might accrue at least in part both to producers selling under these price schedules and any producers selling under further price contracts?

MR. COATES: Yes, sir, I would say that

the possibility of a company owning the 7½ per cent would be accelerated so there could be a possible re-engotiation of contract purchase price which is of benefit to producers.

MR. COMMISSIONER BRITNELL: And to all of the producers under all of these schedules?

MR. COATES: Yes, sir, that is correct.

MR. COMMISSIONER BRITNELL: Thank you.

MR. McNEILL: I would refer you to the volume which has been entitled "Gas Sales Contracts", the last item in that volume which contains the precedent agreement and attachments thereto covering the sale at Emerson and the sale at Niagara Falls, to Exhibit B, to the original agreement of August 11, 1955, at the top of page 3. Exhibit B, I might add, pertains to the sale at Niagara Falls and the third paragraph on that page reads:

"It is agreed and the contract relating "to such quantity of gas shall provide that "Trans-Canada shall have the right to require "Tennessee and Tenessee will be obligated to "purchase said quantity only if Trans-Canada "is delivering and so long as Trans-Canada "continues to deliver or has available for "delivery to Tennessee at the delivery point "provided for in the purchase contract the "quantity of gas which Tennessee is entitled "to purchase daily as provided and contemplated

"thereby without reduction for any reason what-"ever."

Now, the delivery point in the purchase contract referred to is the Emerson delivery?

MR. COMMISSIONER BRITNELL: I do not see yet. Perhaps I am obtuse about this, but I do not see why the two are tied together.

MR. COATES: They were both negotiated at the same time and that was a proviso that we found ourselves faced with in entering into this agreement, that Tennessee was not willing to purchase gas at Niagara except and until they were able to start purchasing gas at Emerson.

MR. COMMISSIONER BRITNELL: I see.

MR. COMMISSIONER HOWLAND: Mr. Orme and Mr. Tippy, I think, will be concerned with my questions. I am somewhat at a loss, Mr. Orme, on the matter of tabulation 3 in Exhibit C-19-3. I believe you changed some figures there.

MR. TIPPY: Exhibit C-19-3 is my item -- what was the question?

MR. COMMISSIONER HOWLAND: Well, at one stage during the earlier part of the hearings you gave us your delivery price at Montreal, Ottawa, Windsor and so on and subsequently I believe you put on the record, which I have not found yet, some different prices?

MR. TIPPY: I believe different prices

were put in from the prices which appeared in our feasibility study in December, 1956 market section, I believe it is the last few pages.

MR. COMMISSIONER HOWLAND: Let us take Montreal, if we can. You give us the equivalent cost of gas at 1.37 and the earlier figures you gave us on your dollar cost was 1.41 to 1.47.

MR. TIPPY: The 1.41 and 1.47 figures were the computation as to what the rates proposed for service in Montreal would produce as the cost of gas to the consumer on the consumption of a typical consumer. They are merely for comparison on this, they do not change the 1.37, but merely give the field for the price the company proposes to sell.

MR. COMMISSIONER HOWLAND: Did you not change the figure?

MR. TIPPY: Yes, sir.

MR. COMMISSIONER HOWLAND: What are your new figures?

MR. TIPPY: I will have to find them. The revised figures I gave were 1.28 per Mcf average for the space heating cost for a typical customer who also had gas for cooking and water heating and 1.41 cents per Mcf for a typical customer who uses gas solely for space heating.

MR. COMMISSIONER HOWLAND: And these are now firm prices, not the offer prices or

estimated?

MR. TIPPY: These prices I am giving you are a computation based on the consumption of a typical customer applying the rates which -- I am not sure, I think these rates are in effect, at least the ones Quebec proposes to apply. I am not sure whether they are in effect or not, but they must be because gas is now coming into Montreal but I do not know of my own knowledge if that is true.

Mr. Orme tells me the rates are not officially approved.

MR. COMMISSIONER HOWLAND: Now, another question following from this: you gave us the competitive prices that you would have to meet under the old figures which was 1.19 competitive with oil at 18.3 if you sold to an automatic space heater at 1.41.

MR. TIPPY: The 1.19 was a computation in answer to a question. It is still 1.37.

MR. COMMISSIONER HOWLAND: It was a figure given in response to a question computed at 70 per cent. That has been bothering me a little because I believe Mr. Orme said the American experience suggested the computation on 60 per cent and I would like to invite a comment on it because I have been getting one or two Canadian authorities, not holding the Americans against the Canadians but ---

MR. TIPPY: I think I did mention that.

MR. COMMISSIONER HOWLAND: I have in front of me something that my colleague Dr. Hardy got for

me, the Dinning Commission here in Alberta in 1949 in their analysis for using oil for domestic purposes they rate 70 per cent efficiency.

MR. TIPPY: Is there a comparable figure for gas?

MR. COMMISSIONER HOWLAND: The same for natural gas. Now, here is another text: "Fuels and their Combustion" by Hazlem and Russell, and here the minimum size oil furnace is 75 per cent to 80 per cent, natural gas for properly regulated fire boilers effieiency can be 84 per cent. I have in front of me the General Electric Company, which I believe is known in the United States, and they show in this advertisement of theirs, it could be a salesman's job, that they have fuel oil equipment which is rated at 75 per cent efficiency. Now, I am a little confused there. I am not trying to put a view forward but most of the standard texts I have read have rated oil at 75 per cent or 70 per cent.

MR. TIPPY: It is a rather complicated and somewhat controversial subject as you will appreciate from the nature of your question. A new, completely new furnace designed for gas you can expect an efficiency in the order of 85 per cent. A completely new furnace designed for oil and with the oil burner for which it was designed can be somewhere in the range of 75 per cent to 85 per cent.

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However, when you are in the position that we are here where your major market, aside from your new homes, which it is an entirely different situation, the question of first cost of equipment and space requirements and so on influences the decision, but the existing market in the old homes is chiefly a market for conversion where you take a furnace that was designed for coal or something else, coal probably, and you insert in that a conversion oil burner or conversion gas burner in which case the efficiencies are not as high as with a new properly designed piece of equipment. These figures we have taken are the figures we have used based on our experience in the market in areas that are already in existence where you are talking about, to a large extent, at least, this conversion market so these factors cannot precisely agree in one series of tests. We believe they represent a composite picture of the thing and fairly set out the conditions you will meet in the field. At least, that is true in our opinion.

MR. COMMISSIONER HOWLAND: Am I right in assuming that a large section of your hoped for market is in the new residential?

MR. TIPPY: As to the new residential you are correct, a lot of the new market comes in the new homes that will follow the growth of population in the E st. As to these new homes,

as I started to say a moment ago, there are going to be some other factors that will enter into the decision of the person buying the house. We expect to get a fairly high percentage of those homes. Mr. Orme tells me in his forecast he assumed initially because of the problem of reaching areas where new homes are being built. In the early days gas may be the fuel for perhaps 40 per cent of the new homes being built in the area, increasing as the distribution system becomes more adequate to reach all the territory, increasing perhaps to 80 per cent or 85 per cent in the latter years. Experience in the United States in some parts was even higher, 90 per cent to 95 per cent, perhaps, or some such figure as that, but in those cases the question of this relative efficiency there is still a difference in relative efficiency. It is not as important to the volume situation as it is in the case of a conversion unit. There are so many other factors that favour a gas unit. As I mentioned before, the smaller space required, the lack of need for storage on the customer's premises and the lower equipment maintenance cost over the years and the lower first cost of equipment. That decision for gas is easier to reach for a new home than for conversion homes.

MR. COMMISSIONER HOWLAND: I do not want to pursue it, really. All I was rather

concerned about was probably the shock of the large figures that were suddenly thrown in front of us.

MR. TIPPY: It is a big country.

MR. COMMISSIONER HOWLAND: I realize that but there are large areas where this domestic market which I believe is about 25 per cent to 30 per cent of your forecast market is, I believe, a lucrative section of your market. A lot of it from Toronto to Montreal and even in Winnipeg is pretty highly competitive in this field?

MR. TIPPY: That is correct, and it is one of the problems that the Trans-Canada people have been faced with and it is why the figures of greater return which I read earlier, where I gave the 7½ per cent, the first five years, that is why we had to be satisfied with a projected lower rate of return in order to get started and get the distributors healthy and as they develop they will be in a better position to pay for gas. The next layer of gas may be at higher prices and they will be in a better position to expand it at that time. I believe the whole thing is time because time enters into it very much.

MR. COMMISSIONER HOWLAND: Now, relating to the market as I see it here you estimate that the industrial sales are going to be about two-thirds, a little less of the market, and of that about one-half

are interruptible sales -- that is on Exhibit 6, Exhibit C-19-2.

MR. TIPPY: I made a computation about regrouping these sales. Basically there is about two-thirds of the sales that is firm or interruptible industrial. The grouping that is most significant, I believe, as far as Trans-Canada is concerned is the grouping between firm and interruptible sales because your firm sales are really made at a price that will stand full price transportation. Both demand and commodity charges, where your interruptible sales do not relate to demand, are really related to the commodity comparison. If you regroup these sales as between firm and interruptible they turn out about two-thirds firm and one-third interruptible. That is determined really by the fact that a pipe line has a capacity and your firm market, as I have discussed in my submission, has characteristics of load factor which you cannot vary. Much of the market varies with the weather, so the interruptible sales necessarily fit into the valley left by the firm sales in the warm days, so the ratio of two-thirds to one-third would not be anything strange to expect. I think it is a reasonable approach.

MR. COMMISSIONER HOWLAND: Well, I am trying to get at some of the material which you fed us, to educate us on the background of this, and I may have got the wrong end of the stick but I gathered from the chart in Exhibit C-19-3 that the load factor, particularly when you get up to 60 to 100 per cent, becomes of less importance.

What I am trying to get at is the over-all policy matter which Mr. Tanner or Mr. Coates or perhaps you, Mr. Tippy, might be prepared to discuss with the Commission, and it seems to me, looking at this, that there does become a stage where there is diminishing return on getting the load factor right to its hilt. On the other hand, with the large proportion of the gas being interruptible and low priced in the market, it might be very good for the consumer in Central Canada or elsewhere but it might have a repercussion on the price of the gas in the field in which the original interest concerned with the ownership of the resources might not be fully realized by loading up to this full load factor.

I believe there has been some discussion here of the problem of price of gas and the consumer's interest. I am sure the Alberta Government is fully aware of the value of the resources for industrial development here.

Now, here we have, it seems to me, a

field of a contrary principle, and I wondered whether you would enlarge on that.

MR. TIPPY: I would like to try, sir, and maybe Mr. Coates would want to add something to it after I have made the effort.

This may seem a roundabout way of getting at it but, again pointing out that the rate of return to the company for a good many years is not what you think of as being a full return on its property investment, I think, clearly, in the early years, the company, and I am speaking of Trans-Canada, needs all the help it can get to get those earnings up to a standpoint where you have a proper financial economy and, being a healthy, growing concern, getting rid of some of these provisions which Mr. Borden referred to earlier. I think that is one element in the picture.

Secondly, I think it is probable, other things being equal and reserves being adequate, in the interests of the producers it is probably desirable to see that they sell at a good load factor. They seem to regard this as being necessary and the contracts which producers entered into with the pipe line have provisions in them possibly of the order of 80 per cent; in other words, requiring an 80 per cent annual load factor in the contract and, when purchased at the wellhead, that gets you rid of some flexibility and makes sure you do not

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[illegible] results [illegible]

[illegible]

penalize yourself on your purchase of gas.

As far as the use of gas is concerned, whether it be for interruptible purposes in the east or whether it be for any purpose contemplated, at least by this pipe line, in my opinion -- and I cannot claim to be an economist -- but in my opinion the use is an economic use. The broad definition of economics, I think, relates to the use contributing to the welfare of the economy, and I think the interruptible sales contributed to the welfare of the economy, although perhaps in a different degree to the other sales having contributed. They are not uneconomic, interruptible sales; that is what I am trying to get at.

It seems to me that the necessity of the producers, as their contracts indicated, also calls for a high load factor, and the way that is achieved is by interruptible sales, except where you can find an adequate storage to convert some of this gas which would otherwise be sold for interruptible purposes into gas available on the peak days in the winter, for a higher type of use at higher prices. If Trans-Canada were fortunate enough to locate additional storage fields, say around Montreal or somewhere like that -- and I don't know that there is any immediate prospect of such a thing -- but if, it would be a very beneficial thing and would let the company operate at a high load factor and would

make the use of the gas the optimum use from the standpoint of the small consumer in the east.

I think that the conclusion you have drawn from my chart on pipe line load factor and its effect on cost of service is correct. The closer you get to 100 per cent, the less each progressive per cent produces in the saving in cost of service; but, again, I come back to the fact that Trans-Canada, at this stage of its development, needs all the help it can get. Maybe, as it goes down the road, it will find its markets have developed and might make it desirable not to go to as high a load factor, and I believe there are some pipe lines now operating in the middle '80's in the United States, successfully, although the change from 95 or 90 per cent load factor to 80 or 85 carries with it the necessity of getting a higher price from the consumer, and those rate increases have not been particularly popular with the distribution companies in the United States.

MR. COMMISSIONER HOWLAND: Mr. Orme, what has been the U.S. Power Commission attitude to this interruptible supply? Have they made any regulations regarding pricing?

MR. ORME: No, sir, they have no regulations with respect to pricing of gas for interruptible sales, because in so far as they are concerned, it is the commodity rate or, in most instances, one of

2 cents per Mcf higher than the effective or proposed commodity rate in the particular zone. They have gone through a successive period of change in thinking in the desirability of interruptible sales and I know we went through a period there where it was quite proper to wave the flag against the conserving of the gas for most uses and we did have a Commissioner at that time (in fact, he was the Chairman) who was very firmly opposed to the sale of interruptible gas, but not to the extent of completely excluding it. His position was that you should devote every effort to acquire and develop a storage field rather than to sell the gas at what he called for inferior uses and, in that way, the gas would be conserved for the superior uses; but he never quite got to the point, with respect to the storage field, that he would deny any sale of gas for interruptible purposes, because it was increasingly obvious that, without it, the pipe line rates for residential and commercial gas would have sky-rocketed in a number of instances had those sales been prohibitive.

MR. COMMISSIONER HOWLAND: My impression was that Mr. Hetherington told us there had been some ruling as to allocation of costs of interruptible sales.

MR. ORME: No, sir, they take their same allocation along with other sales, except when you

come to using volumes for allocation in part of the daily requirements; but, theoretically, of course, they can be cut off on a max day when needed by the pipe line, but, in order to reimburse the pipe line for their use of the pipe line, say, for 300 days of the year or 350 days and only be cut off four or five days, it has become a practice of putting it in, so then your demand cost would be assessed against that and that usually results in one cent or two cent higher prices being charged for interruptible sales than a commodity rate.

MR. TIPPY: I would like to add one thing to what Mr. Orme has said. On the other side of the ledger there have been one or two decisions of the Federal Power Commission recently which have -- I don't know that they have been decisions but, at least, agreements, which have been permitted to become effective where the commodity rates having to do with interruptible sales were allowed to be less than the form of service it has run to, because they were aware of the competitive conditions in the market that would require that there be some slight adjustment, but it has never been a material adjustment.

However, they have recognized that competition is a factor.

MR. COMMISSIONER HOWLAND: Thank you.

MR. COMMISSIONER LEVESQUE: Mr. Coates,

when we speak about 2,294 miles distance, does this include or exclude the distance of the Crown line?

MR. COATES: That includes the Crown line, sir. That is the distance from the Alberta-Saskatchewan border to Montreal and includes the line to Ottawa.

MR. COMMISSIONER LEVESQUE: This probably is a question you would expect from me. What is the price, per Mcf, for gas sold to the Quebec Natural Gas?

MR. COATES: Sold to Quebec? I believe Mr. Orme could answer that. He has the rate schedules there.

MR. ORME: Quebec Natural Gas purchased gas from Trans-Canada under the Eastern zone rate and, in the terms of their contract, they purchased this gas under the 90 per cent load factor, take-or-pay, which has a lower figure than 75 per cent. That rate is -- the contract demand is $5.05 per Mcf of the demand per month, and the commodity rate is 28 cents.

They have also entered into -- they also have contractual arrangements to buy off-peak firm gas during the summer months in the years commencing the year 1961-62, I believe, and that rate was 37 cents or 39 cents -- I don't recall ---

MR. COATES: 39 cents.

MR. ORME: 39 cents as the long term

off-peak, for the eight or nine months.

Temporarily, of course, they are not paying the contract rate, which will be in effect upon the commencement of delivery of the gas in Western Canada. They are paying a different and slightly higher rate during the interim periods while they are receiving gas from Trans-Canada by way of Union Gas Company, reflecting the higher cost of gas.

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MR. COMMISSIONER LEVESQUE: You are not able to give me the average per MCF?

MR. McNEILL: I think, Mr. Levesque, if I were to refer you to the tabulation under Tab C of the submission, the rates are shown there together with the average cost of gas under each rate.

MR. TIPPY: Under the main contract with Quebec Natural, which, as Mr. Orme has told us, there is a 90 per cent minimum take-or-pay and at a 90 per cent minimum the rate is 46 3/10ths per MCF. Actually, Quebec Natural hopes to take gas at a little higher load factor than the 90 per cent, which would bring them down to just something under 46¢.

MR. COMMISSIONER LEVESQUE: Mr. McNeill, could you tell me who is the chairman of the voting trustee committee?

MR. McNEILL: Mr. D.H. Atkinson.

MR. COMMISSIONER LEVESQUE: Mr. Atkinson, could you tell me if it is the policy of the committee to sell all of these shares that are held in the voting trust?

MR. ATKINSON: I am sorry, I did not get the question.

MR. COMMISSIONER LEVESQUE: The shares which are held in the voting trust, do you think they will all be sold before 1966?

MR. ATKINSON: I would not anticipate --

of course, I have no knowledge of what the owners have in mind.

MR. COMMISSIONER LEVESQUE: Because, you do know that quite a few were sold?

MR. ATKINSON: They have to meet certain conditions to withdraw, and whether or not any further major holders have in mind, or do not have in mind meeting those conditions, we have no knowledge. At this minute, I have no knowledge of any further major holders ---

MR. COMMISSIONER HARDY: Mr. Chairman, I wonder if I could ask a question of Mr. Orme, with reference to Exhibit C-24-8, the one brought in yesterday, in reference to the financial analysis?

In addition to the 7 1/2 per cent return you include income tax as an expense, Mr. Orme. Would that be permitted under F.P.C. regulations?

MR. ORME: Yes.

MR. COMMISSIONER HARDY: The second question concerning F.P.C. policy: under circumstances similar to what we have here, where we have had estimates of proven reserves from 20 to 30 trillion presented to us here; semi-ultimate reserves as high as 300 trillion -- in fact, the maximum seems to be 308 trillion -- under those circumstances what sort of policy did F.P.C. take in not permitting their commitments or the commitments of the companies to approach the ultimate or the proven reserves or exceed them?

MR. ORME: I do not know that they have been confronted with that sort of situation. What happened was, before, in conversation, I have related the reserves for the particular company or the particular pipeline before they have certification and they assured us, in each instance, that the gas reserves which were dedicated to the pipeline. At one time the average had to be sufficient to support the estimated requirements for 20 years; that was on the basis of operation in the fifth year; the requirements and reserves available. Later, by experience, we learned that did not assure full deliverability, so from that time, in granting a certificate, they required the amount of reserves capable of deliverability in the fifth year. That has varied all the way from 14 years, 18 years and 20 years. They do not like to go down below 18, but they have in one or two instances because of the obvious emergency need of the area involved for gas; they did permit a pipeline to go on a 14-year basis with the assurance from the pipeline they would better that at the earliest possible moment.

MR. TIPPY: May I add to that, Dr. Hardy? You mentioned two types of figures: one, proved or probable reserves, which is gas available at any point of time; and the other is this more elusive figure, what the ultimate recoverable reserves in the area may be. In trying to get my own mind

decided on these things, I came to this conclusion: that the ultimate recovery of reserves and the trend in discoveries which, according to what I have heard here in the last year is about 2 trillion per year, and from the plotted curves it has been on the order of 2 trillion for a couple of years for present proved and probable reserves, and the trend of discovery seems to me to be the basis on which a company like Trans-Canada, or even others, can look to the future for a limited period.

I have in mind, perhaps, looking to the future for 10 years, I would say. With a 10-year look, you are in a position at the present time, by having sufficient facts, say, or a 10-year forecast on what the reserve may be, while it will never prove to be accurate it probably would not swing too far one way or another. This is for planning purposes, for that look ahead as to how things in the future will be met.

As to the actual approval of construction of additions to a particular line which serves a given market, it seems to me, for a period, you have to have gas in hand. You have to have sufficient gas to meet the requirements of the financing warranted. The original financing of Trans-Canada was possible with a 25 -- I guess it was actually a 27-year permit, although effectively it was 25 years, because it would take some time to get the project

in motion. A 25-year permit, such as was granted by the Alberta Conservation Board proved an adequate criterion for the financial people, so that we are able to finance an initial piece.

As Mr. Stewart pointed out yesterday, there will probably be, in the future, layers of gas added to this initial granting as the pipeline expands a piece at a time. Each of those layers will have to be supported, from the standpoint of financing, by a permit from Alberta to withdraw some specified volume of gas per year for 25 years, and there will have to be, of course, gas under contract by Trans-Canada to fill this next layer, so that the actual construction and commitment of dollars to the service of the market is based on the gas in hand.

So, in the planning it seems to me you have to look to the future. Mr. Stewart gave you the figures yesterday for the planning phase of the thing for Trans-Canada for the first 5 full years under Mr. Orme's market forecast. It is possible to plan 10 years, but, on a 5-year basis, you got it from Mr. Stewart the other day, there are two ways to figure out the large amount of recoverable gas which gives you the ability to plan ahead and think for the future. However, the immediate structure has to be financing, and the basis for financing requirements may prove to be an adequate basis

for the authorization, say, by a Board.

MR. COMMISSIONER HARDY: I have one other brief question: both Mr. Orme and Mr. Coates have used the phrase "conservative estimates" and pointed out that Commonwealth are always conservative in their estimates. Unfortunately, in a good many other briefs -- and it was also mentioned, even with the figure 308 trillion, there is the magic word "conservative" attached to that,too, and I must say I am a bit confused as to when you are conservative and when not, other than in politics.

I take it, Mr. Tippy, this gas analysis on your tabulation, where you get your figure down to $1.19, which is not a very good looking figure for the Montreal consumer, is for the competitive rate with oil if you assume equal efficiencies. You gave us that figure yesterday.

MR. TIPPY: Yes, that was a figure I computed at somebody else's request. I think $1.37 is a better figure from the competitive standpoint.

MR. COMMISSIONER HARDY: But if we make the assumption your efficiencies are equal, then $1.19 is the figure?

MR. TIPPY: That is the figure.

MR. COMMISSIONER HARDY: Which I assume is, maybe, not a conservative estimate. I would suggest you are underriding the oil and coal on any

figures I can get and overriding the efficiencies on gas, and it does not matter what the American figures are, it is only that they do think it affects the economic rate point.

MR. TIPPY: There is another way to get at this: what you say is a matter of one man's relative experience against another's. Our experience fits these figures, which we have adopted for forecast purposes.

I call your attention to Chart No. I, which was sometime referred to as "the milky way" chart.

MR. COMMISSIONER HARDY: That is what worries me.

MR. TIPPY: That is on the basis of direct fuel costs and there is no factor of relative efficiencies in that figure. This is strictly on B.T.U. fuel gas that has been correlated on a slightly different basis than tabulation 3.

MR. COMMISSIONER HARDY: That is my very point: if you follow from tabulation 3, that figure of $1.19 on gas to cost $1.41, or so, it brings you on your chart to a saturation of something only like 20 per cent.

MR. TIPPY: Let me see, the $1.41 is the instance where the consumer makes no use of gas except for space heating. In Montreal there are already something on the order of 250,000 customers

using gas ---

MR. COMMISSIONER HARDY: What figure would you want to use instead of $1.41?

MR. TIPPY: I would think, where we are talking about converting the present customers to the use of gas for space heating, we could use that other figure -- $1.48, I believe.

MR. COMMISSIONER HARDY: Would that apply to Toronto?

MR. TIPPY: No, there was a different figure for Toronto. I will find that for you.

MR. COMMISSIONER HARDY: I do not think we need to get into detail.

MR. TIPPY: The point I would like to make, these are the rates proposed by these companies at this time and we know enough about the attitude of the management of those companies, both in Toronto and Montreal, I think, so we can say that their policy, in Toronto at least, is for approved downward adjustment in their rates, and as they make these downward rates, the success they have in attaching business has been increasingly good. They are proving in another way the kind of thing we are saying here. They are looking for this business and expect to serve it, and as their number of space heating customers increases their ability to make further rate reductions increases and, I think, you will find that the pattern will not be static as

at the present time and there will be, if need be, a continuing rate of adjustment, if you will, in the space heating rate in order for the company to achieve the saturation which it feels it would have, to satisfy the public and to be a successful operation.

The problem is one of timing, to some degree. The lower the rate they can establish for space heating, the quicker these customers will come on. So I think our real problem is one of timing. This is our best judgment as to what the timing will be, and I, again, call your attention to the fact that even in the 30th year of this estimate, which is admittedly going out a long way from the present time, we expect only to have a little better than half of the homes in the market areas using gas for heating.

We recognize we are not in a position of being able to suddenly sell the entire market; it is not possible because of the cost of getting gas to the east, and the other factors of the economics of the distribution companies. It will be a gradual development, as Mr. Orme's chart shows.

THE CHAIRMAN: Mr. Tippy, have you likewise investigated the intentions of the vendors of fuel oil or coal with respect to the reduction in their prices over the next few years? You told us the gas prices are going down and all that, and that

is the policy of the distributing companies, but have you really gone into it in the preparation of this report, and consulted with the oil companies and the coal companies?

MR. TIPPY: Sir, we have not consulted with them. There is a pattern that has evolved over the years in circumstances like the one we are facing here, and I would think our feeling is our own knowledge, if you will, or past experience on this which gave us the assurance we needed to make the market assumptions we have made. The history has been that the price of No. 2 fuel oil for the domestic consumer has not, over a prolonged period of time, been cut anything like resembling a price war to see who captures this market. That has been the trend in New England and the east and we have watched very carefully what has been done by the oil and coal industries.

THE CHAIRMAN: Would you ascribe any particular reason to that?

MR. TIPPY: I think there are two things that enter into it. I do not think they immediately lose a market -- either of them. I think the growth of the country and the fact that we have new homes being added here, that even in a forecast like this we are only looking to attach half of the potential space heating market in 30 years' time. We lead them to believe the possibilities to be gained by themselves, through

a price reduction, are not good in the long range, plus the fact that my understanding, which, admittedly, is not completely technically solid -- but my understanding as to how the oil business operates is that they have quite a bit of flexibility in the products which come out of processing of crude into final products. Their flexibility has been such in the past that they have met this situation and have not suffered in it.

THE CHAIRMAN: But you made no inquiries from them?

MR. TIPPY: As to this specific situation, we made no inquiries other than the history of the prices of oil in that area and the history elsewhere.

THE CHAIRMAN: I know we have it in the record elsewhere, but I wish you would remind me: would you tell me what the actual sale price is at the Emerson outlet per MCF? Is it 20¢?

MR. McNEILL: I refer you to Tab C. It varies as the contract progresses. You will notice the first 3 years are at 75 per cent peak load.

THE CHAIRMAN: That is the calculation that starts out at 25.6¢ and goes down?

MR. COATES: It goes down because of load factor basis.

THE CHAIRMAN: Before we get to the end, let me just say that there has been the impression created that Trans-Canada has had, and is having,

difficulty in consummating contracts for the purchase of gas in Alberta. Is that right?

MR. COATES: Yes, sir. We have not been able to purchase large quantities of gas recently.

THE CHAIRMAN: Mr. Coates, am I correct in thinking that we had price schedules 2 and 3 put before us to show that these prices have been moved upwards?

MR. COATES: Yes, sir.

THE CHAIRMAN: Can you tell me when and from whom the first substantial purchase of 12¢ gas was made by your company?

MR. COATES: I think Mr. Horte will answer that.

MR. HORTE: It was from the California Standard Company in the Homeglen-Rimbey field for the purchase of 10 million cubic feet per day in May, 1957.

THE CHAIRMAN: And the next one?

MR. HORTE: The amounts we have bought at 12¢ have been a total, I believe, of 12 or 13 million cubic feet per day.

THE CHAIRMAN: Let me get it in a negative way: is it incorrect for me to assume that you have purchased, one of your first purchases at 12¢, in the Carbon-Silver Lake area properties, owned by Tennessee Gas Transmission?

MR. HORTE: I might check the date and see.

THE CHAIRMAN: Have you a contract in that area for 25 million cubic feet?

MR. HORTE: Sir, we have a contract with Tennesee in that area for 25 million cubic feet, and a contract with Hudson's Bay Oil and Gas, a similar type of contract, for 45 million cubic feet in the Olds-Lanaway-Garrington area. A type of contract that is a letter agreement contract contemplating the development of reserves in this area, and if such reserves are developed, the sale of those reserves to us up to that quantity. At the present time the reserves in the areas are very minor. The contract provides the take shall be 1 million a day for 10 billion cubic feet of reserves at any time.

THE CHAIRMAN: What percentage of your total contractual purchases of gas are with Tennessee Gas Transmission at the present time?

MR. HORTE: I will have to get that figure but I have it.

MR. COATES: Mr. Chairman, the last question you asked Mr. Horte about having a contract with Tennessee, did that refer to the Carbon field?

THE CHAIRMAN: Carbon and Silver Lake.

MR. HORTE: Sir, the date of the Carbon-Silver Lake contract with Tennessee Gas Transmission was June 12, 1957. The contract with Hudson's Bay Oil and Gas Company was June 15, 1957. The contract I mentioned earlier with California Standard was in the early part of May; I have not the exact date with me.

THE CHAIRMAN: Then have you got that percentage figure?

MR. HORTE: I have a percentage figure, sir, which does not include this latest contract, this 12-cent contract which was mentioned with Tennessee Gas Transmission. At this time the reserves associated with that contract are very minor, they are in the order of 17 billion cubic feet and if the contract were in effect today the take from that contract would be approximately 1.7 million a day and not be 25 million a day

as provided in the contract. Therefore, the percentage that right today we would have under contract from Tennessee Gas Transmission, all our total contracts, is approximately 3 per cent.

THE CHAIRMAN: Three per cent approximately?

MR. HORTE: Approximately 3 per cent.

THE CHAIRMAN: That is after making adjustments with respect to the Carbon-Silver Lake field?

MR. HORTE: Yes.

THE CHAIRMAN: Is not any of that gas contracted at 10 cents?

MR. HORTE: Yes, sir, the largest portion of that gas is contracted at 10 cents. The 10-cent contract with Tennessee Gas Transmission provides for the delivery of 16 million cubic feet per day.

THE CHAIRMAN: Let us go one step further. What percentage of your contracted purchases are with the successor to Canadian Gulf Oil, British American Oil?

MR. HORTE: That figure, based on reserve estimates prepared by Mr. Stewart of DeGolyer and MacNaughton indicate that as of today of our total reserves under contract, 33.5 per cent are under contract to us from B-A Oil Company.

THE CHAIRMAN: Have you the figure readily available as to what proportion of that percentage

is 10-cent and what proportion is 12-cent gas?

MR. HORTE: That is all 10-cent gas.

THE CHAIRMAN: And what proportion is Hudson's Bay?

MR. HORTE: 11.4 per cent, that being almost completely 10-cent gas except for one small contract in the Bindloss area which is for less than one million cubic feet a day and would not include this 45 million a day from the Olds-Lanaway-Garrington area in which at this time there have proved to be very minor amounts of gas reserve.

THE CHAIRMAN: Thank you very much.

Mr. Pattillo, have you anything further?

MR. PATTILLO: I have nothing further, Mr. Chairman. I think Mr. McNeill has something to say.

MR. McNEILL: Sir, throughout the hearings various of our witnesses have been undertaking to produce various items of information which from time to time I have been supplying, and I have some more to put in which will take a few minutes. In addition to that I believe Mr. Orme has some further explanations to make in connection with the statement that he has been testifying to. I do not want to take any more of the time of the Commission but I would prefer that we not try to rush it through. It is getting pretty late now and perhaps we should go on after lunch. I thought this was the proper

time to tidy up the record.

THE CHAIRMAN: Oh, we must tidy it up, there is no question about that. How long would you anticipate this would take?

MR. McNEILL: It should not take us any more than ten or fifteen minutes at the most, I would think ten minutes would do it.

THE CHAIRMAN: Fine. It is our intention to hear the submission of the Corporation of the City of Edmonton after we have finished this afternoon with your submission, Mr. McNeill, and I believe His Worship the Mayor of Edmonton is here and perhaps we could set our hearing for two-fifteen this afternoon and plan to go on with the Corporation of the City of Edmonton immediately after we finish with Trans-Canada.

MR. McNEILL: I am sure we will not be any more than ten minutes.

THE CHAIRMAN: We will adjourn now and reassemble at 2.15 this afternoon.

---Whereupon the hearing adjourned at 12.35 p.m. until 2.15 p.m.

---On resuming at 2.15 p. m.

THE CHAIRMAN: The Commission will now resume its hearing. Mr. McNeill?

MR. McNEILL: Sir, there are several items we wanted to tender, most of which I think had been asked for.

First of all, though, Mr. Orme would like to make a short statement in connection with some of his material.

MR. ORME: Mr. Pattillo, you asked me to give you the percentages, if I understood your question, of industrial gas which were presently under contract, and I was not too sure whether you meant under contracts between Trans-Canada and its distributing company customers or whether you meant contracts between the distributing companies themselves and their industrial customers.

In answer to the first one, about 65 per cent of the industrial load reflected in my estimates for the first five years are presently under contracts which are presently in existence between Trans-Canada and its distributing company customers.

As you appreciate, this is a changing picture every day and, of course, we are not intimately informed with respect to the contractual relations between the distributing company customers and their industrial customers but, to the best of

my knowledge, there is between 25 and 30 per cent of the industrial load that are reflected in my projections in the first five years that are either presently under contract between distributing companies and their customers or will be within the next couple or three days.

MR. PATTILLO: Thank you.

MR. ORME: I also should add to that that there is also under negotiation another approximately 10 per cent of its industrial load by the distribution companies with the respective industries which should be consummated within the next week or ten days.

I also have available at this time the Exhibit C concerning which I gave some figures on yesterday as to the alternate comparison of the estimated revenues and the costs of service for the Mid-Western sales at Emerson, on the basis of an allocation of system costs of west of Winnipeg to the Mid-Western sales plus the entire cost of service associated with the Emerson lateral, plus the cost of the gas purchased.

MR. PATTILLO: I suggest that they be marked as Exhibit C-25-1.

---EXHIBIT NO. C-25-1: Trans-Canada Pipe Lines Limited, alternate comparison of estimated revenues and costs of service (including 7½ per cent return) for proposed sales to Mid-Western Gas Transmission Company at Emerson, Manitoba (U.S. export).

MR. McNEILL: Mr. Chairman, Mr. Tippy now has some material that he wanted to produce, which he will describe.

MR. TIPPY: Mr. Pattillo, you asked about percentages as between residential, commercial and industrial sales and the markets outlined in the December, 1956 market study.

I now have those figures and these do not reflect curtailments. These are figures of the market and should be considered as comparable to the figures in Mr. Orme's present-day market study.

For the year 1958-59, residential, 20.32 per cent; commercial, 6.54 per cent; industrial, 73.14 per cent.

For the year 1959-60, residential, 22.96 per cent; commercial, 6.65 per cent; industrial, 70.39 per cent.

For the year 1960-61, residential, 24.74 per cent; commercial, 6.66 per cent; industrial, 68.60 per cent.

For the year 1961-62, residential, 26.45

per cent; commercial, 6.67 per cent; industrial, 66.88 per cent.

For the year 1962-63, residential, 28.69 per cent; commercial, 7.01 per cent; industrial, 64.30 per cent.

In addition, I have prepared and have ready for distribution a one-page exhibit similar to page 1 of Mr. Orme's Exhibit C-24-8, which is a comparison of estimated revenues and costs of service, including a 7½ per cent return, for the proposed sales to the Canadian markets, which is a companion exhibit to Mr. Orme's C-24-8, which was for the Emerson return.

MR. PATTILLO: I suggest that that be marked C-25-2.

---EXHIBIT NO. C-25-2: Trans-Canada Pipe Lines Limited, comparison of estimated revenues and costs of service (including 7½ per cent return) for proposed sales to Canadian markets.

MR. McNEILL: Now, Mr. Chairman, if I might just proceed, for a moment, I believe it was on the first day of the hearing that my learned friend Mr. Pattillo was asking Mr. Berry concerning assets and liabilities and the financing position generally of the Trans-Canada Pipe Lines immediately after the amalgamation of Western Pipe Lines and the original Trans-Canada Pipe Lines Limited.

We have obtained, and I can file -- I have only six copies -- a consolidated balance sheet prepared at the time by Messrs. Peet, Marwick, Mitchell and Company, as of July 31, 1954, which, so far as Mr. Berry has been able to ascertain, was the first consolidated statement. You may recall the amalgamation took place over a continuing period of time.

If I might just deliver those to Mr.Pattillo now.

MR. PATTILLO: I suggest this be marked C-25-3.

---EXHIBIT NO. C-25-3: Consolidated balance sheet dated July 31, 1954.

MR. McNEILL: My learned friend also was asking concerning the incorporation of Western Pipe Lines, the names of the original incorporators and the capitalization of that company.

Western Pipe Lines was incorporated by Special Act of the Federal Parliament, which Act was assented to on the 30th day of April, 1949. I believe Mr. Nesbitt gave, from memory, the names of the incorporators, but perhaps to make sure our record is accurate, I should read the names again:

Lionel B. Baxter; Edward A. Nanton; David A. B. Murray; Gordon P. Osler; Harold G. Tucker, all of the City of Winnipeg.

The capitalization, as provided in Section 3 of the Act, shall consist of 2,500,000 shares, without nominal or par value.

I was also asked to supply material concerning the option that had been granted to R. J. Wallace and, subsequently, assigned to Ike P. Leroux. I have found that option, which was for 5,000 shares, was exercised, and the 5,000 shares were delivered by the company on the 25th day of April, 1957 to the Canadian Bank of Commerce as agents for Mr. Leroux. The actual issue was in the form of five certificates for 1,000 shares each.

Mr. Leroux, very shortly thereafter, transferred those shares to a very long list of individuals, the shares being in the amounts of 20, 40, 60 shares, 45 shares, and I don't know that there is anything to be added by reading all of those names into the record. The transfer took place on the 16th day of May, 1957; that would be less than a month after the original issue to Mr. Leroux.

THE CHAIRMAN: Do you want the names, Mr. Pattillo?

MR. PATTILLO: I don't think we need the names.

THE CHAIRMAN: I see no point.

MR. McNEILL: Mr. R. A. Brown, Jr., president of Home Oil Company Limited, was asked to supply details as disclosed by the share register of Home Oil

Company Limited as between Canadian and non-resident registrants, both for the Class A and the Class B common shares.

I am in receipt of a letter from Mr. Atkinson, the treasurer of Home Oil Company Limited, in which he has handed me three copies of a schedule setting out an analysis of the share ownership.

THE CHAIRMAN: Is this our Mr. Atkinson?

MR. McNEILL: No, sir, it is another Mr. Atkinson. They are all financial persons.

MR. PATTILLO: I suggest that that be marked C-25-4.

---EXHIBIT NO. C-25-4: Home Oil Company Limited, analysis of share ownership, dated February 21, 1958.

THE CHAIRMAN: Mr. Pattillo, I wonder whether that should not be read into the record rather than just being left as an exhibit. It surely is not a very long document, is it?

MR. PATTILLO: No. I will read it into the record. This is an analysis of the share ownership of the Home Oil Company Limited:

Class A, Canadian shareholders, 5,228; non-resident holders, 2.020. Canadian shares, 1,040,156; non-resident shares, 486,065; Canadian shareholder percentage, 68.15 per cent; non-resident shareholder percentage, 31.85 per cent.

Class B, Canadian shareholders, 2,962; non-resident, 1,143; Canadian shares, 1,817,915; non-resident, 505,816. Percentages, Canadian, 78.23 per cent; non-resident, 21.77 per cent.

Total, Canadian shareholders, 8,250; non-resident, 3,163. Canadian shares, 2,858,071; non-resident, 991,881. Percentages, Canadian, 74.24 per cent; non-resident, 25.76 per cent.

Total shareholders, 11,413; total shares outstanding, 3,849,952.

MR. McNEILL: Now, sir, among other things I have undertaken to supply certain information respecting the date of and the consideration for the assignment by Mr. Kernan to White, Weld & Company of one-half of his commitment to buy shares in Trans-Canada. I have not been able to obtain that information yet. I will, if it is satisfactory, submit that by letter.

One further thing, sir: as I stated this morning, Mr. Howe's letters, I will file photostatic copies of those with Mr. Pattillo, if that is satisfactory.

We have not, whether you consider it necessary, placed on the record Mr. Atkinson's qualifications. I think possibly the Commission is fully aware of his qualifications and the fact that he is a director of Trans-Canada Pipe Lines Limited.

THE CHAIRMAN: Oh, we are all aware of

his qualifications.

MR. PATTILLO: We established that he was a director of the company and how long he had been and I think we are all aware.

MR. McNEILL: Now, sir, we had, I believe, other than those exceptions I have just mentioned, supplied your Commission with the information which has been requested. If we have, in fact, missed anything, we will be checking the transcript and attempting to pick up anything like that, or any communication like that from Mr. Pattillo or the staff, we will attempt to meet as quickly as we possibly can.

I assume the situation still pertains, that Trans-Canada Pipe Lines Limited will be allowed to file further submissions, particularly on the subject of regulation and possible forms and extent of regulation, as we had been given to understand we would prior to the making of this submission; and I assume, too, that any material that we may feel is helpful to the Commission on that subject could be submitted at a later date.

THE CHAIRMAN: Yes, Mr. McNeill. The Commission has discussed that and the manner in which such submissions might be procured or dealt with. I think it is our view that we would prefer to have those submissions -- and I hope Mr. Chambers is here, because Mr. Hetherington or Mr. McDonald

mentioned the same thing -- I think we would prefer to have such submissions in writing and simply sent to us. It would not be our intention or purpose to examine on such submissions, necessarily. We would appreciate the assistance from industry in that regard, very much indeed. We want such submissions and are delighted that you will do so, and I was very happy the other day when Westcoast said that they would, also; but I think our present feeling -- we may change our minds, but our present feeling is that we would not want to examine on those submissions but might quietly ask someone from the industry to explain any points that we may be a little doubtful or dubious about in our minds.

MR. McNEILL: Then, sir, as far as any written summary or sum-up of the material that we have submitted, either in summary form or even in brief or argument form, I assume, will also be received?

THE CHAIRMAN: That is right, and, of course, I certainly do not wish to press you, but we would like to have it within a reasonable period of time, you know.

MR. McNEILL: Yes, sir.

THE CHAIRMAN: I know you have been very pressed and I don't mean that you should burn any midnight oil at all in getting it ready; but I would not want it to go over for months and months.

MR. McNEILL: It just occurs to us that a brief but factual re-hash of the material that has gone in, in summary form, might be of assistance to the Commission.

THE CHAIRMAN: I beg your pardon. I was still thinking of your submission with respect to regulatory control.

MR. McNEILL: Well, that, sir, we will certainly place before you just as soon as we possibly can.

THE CHAIRMAN: Right.

MR. McNEILL: Then, sir, that completes our submission, subject, as I say, only to any further requests for information that the Commission may desire to forward to us.

THE CHAIRMAN: Well, on behalf of the Commission, Mr. Tanner, Mr. Coates, Mr. McNeill, your associates, Mr. Orme, Mr. Tippy and all of you, I want to thank you most sincerely for the frankness with which you have given your evidence before the Commission and the way in which you have endeavoured to help us get to the pertinent facts and answers to the questions which we have asked. We all feel that you have been most cooperative and we apologize if we more or less changed the tempo and caused all this midnight oil to be burned; but it was not and is not of our own choosing. I think we have all come to realize that there are only

twenty-four hours in a day and there is an awful lot of work to be done yet by the Commission.

Thank you very, very much.

MR. COATES: Mr. Chairman, on behalf of my colleagues I would like to thank you and your associates on the Commission and all of the Commission staff for the courtesy that they have shown us here. We realize that the tempo of the investigation, the hearings, had to change. It has been a very pleasant challenge to us to attempt to supply the information you wanted, in the form that you wanted it and as you wanted it.

If we have missed any of it, as Mr. McNeill has just said, we would be more than pleased to deliver it to you in whatever form you would like to have it.

I would also like to take this occasion to say we sincerely appreciate this opportunity to appear publicly, to add many facts as to Trans-Canada as they exist and not as they exist by rumor and hearsay.

Thank you very kindly, sir. It has been a real pleasure.

THE CHAIRMAN: Thank you, Mr. Coates.

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Submission of

THE CORPORATION OF THE CITY OF EDMONTON

Appearances:

His Worship Mayor W. Hawrelak

Mr. J. M. Tweddle	-	Commissioner
Mr. D. B. Menzies	-	Commissioner
Mr. Alan Macdonald	-	City Solicotor

THE CHAIRMAN: Mr. Pattillo?

MR. PATTILLO: Mr. Chairman, we now propose to take up the brief filed by The City of Edmonton and we have with us today His Worship the Mayor, Mayor Hawrelak and the city solicitor, Mr. Macdonald.

I assume that his worship is going to present the brief but I think, in any event, it should be read into the record, and my suggestion is that the document be marked as C-25-5.

---EXHIBIT NO. C-25-5: Brief submitted by The Corporation of the City of Edmonton.

THE CHAIRMAN: Mr. Hawrelak, would you care to read your submission, sir? You may remain seated; whichever you prefer.

MAYOR HAWRELAK: Mr. Chairman,honourable members of the Commission, I wish I were able to have

had the opportunity of welcoming you to the capital city of this province. However, circumstances are such that we are very happy indeed, as fellow Canadians and Albertans, in particular, to at least have this opportunity to have you come into our neighbouring community of Calgary and make sure that the special arrangements that have been made for you here will mean that you have been warmly and properly received.

We have with us here today Mr. Menzies, to my right, and Mr. Tweddle, both City Commissioners, and our City Solicitor, Mr. Macdonald.

I might warn that if you find any circumstances in the brief which are correct, it is because of the Mayor. If there is anything that is wrong, I am hopeful that it will be accepted by the Commissioners and the City Solicitor. That is the usual sort of thing that happens in circumstances like these.

But, seriously speaking, sir, I am going to read this brief and I will make several comments on what we call here a very brief brief indeed. I preface our remarks by saying that this, of course, is not a brief of technical information or even, perhaps, accurate from the point of view of strict information; but it is one that intends to make a statement of opinion. We have certain opinions and certain ideas with respect to the gas question and we do not even

know whether, in fact, some of our ideas are workable, but we have confidence in coming before you, sir, and your colleagues and your associates on this Commission, and in having you investigate this matter and see if, in fact, these ideas are workable, see if our ideas are at all worthwhile. They are presented with considerable thought, with respect to the general idea of an expression of opinion and, with these few remarks, I now intend to read the brief.

THE CHAIRMAN: Thank you.

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Speaking as Commissioners for the City of Edmonton we consider that such subjects as the gas and oil reserves of Alberta are in the competent care of the Alberta Oil and Gas Conservation Board. Our concern in this brief submission will be to outline the special problems of a municipal government that is the involuntary heir of some of the advantages and many of the financial problems that have stemmed directly from the finding of great oil and gas resources in this Province.

We think that Canadians should have first call upon Canadian energy sources of gas and oil. If this means a relatively slower sale and exhaustion of Canadian oil and gas reserves than will occur if long term and high rate delivery to the American market is permitted, then this does not appear too serious a matter.

We believe that natural gas is a unique heating fuel for which there is no comparable substitute available or in sight. We do not fear that technology will render gas obsolete as a fuel in Alberta and we believe that it will be in steady and increasing demand for many years to come.

We feel, in making that statement, that from the information we gathered from the Conservation Board, and which we believe was presented to your Board here on the subject of the life index of the various gas periods, certainly in Alberta

and the United States, we note that in Alberta the life index which, we understand, is the ratio of gas available to demand, in 1953, stood at 219: in 1956, 173; and in the Board estimate for the year 1963, that index will stand at 60. We are assuming in this that the Board, in making these calculations, had allowed for the possibility of gas export, whilst in the United States it appears in 1956 it was 22.5, and prior to that for a good long time it stood at 25. Now, the only comment I would wish to make on that is, it seems we will have an abundant supply of gas, and in all probability the supply of gas in the United States will be declining, but the market and the usability of gas will, at the same time, be on the increase. Perhaps from that point of view we here in Alberta and in Canada, in our view at least, have few fears that there will be little use found for gas 10, 15 or 20 years from now, if it were not now immediately available for export.

Conclusion: We believe that Canadian natural gas should first be distributed to Canadian population centers if it can be delivered at a commercially competitive price.

2. If those Canadian needs that are economically sound are first met, then the American market should be supplied with our natural gas, but export licenses should only be granted under the following

conditions:

1st - with the annual maximum take-out carefully controlled by contract;

2nd - with initial contracts for the take-out limited to a 20-year period - renewable thereafter only if it is to the benefit of the Canadian economy.

May I say, the reason we use 20 years is that we thought of it as a conservative period and that is the only reason for using it.

The submission by the Municipal Corporation of the City of Edmonton that is made as paragraph 2 above is premised upon the statement made by the Alberta Oil and Gas Conservation Board which we accept without reservation, namely, that the reserves of natural gas within this Province are sufficient to meet both the domestic and the export demands that may be put upon the supply over a 30-year period.

We note from the presentation made to you that as of January 1, 1957 there apparently is an economic reserve of gas somewhere in the neighbourhood of 16 1/2 trillion cubic feet. We also notice that it might well be that that figure might be 75 trillion cubic feet, so that we say we accept the statement made by our own Board, in whom we have the greatest confidence, and it appears that there is an adequate supply over a fairly long period to

meet the needs of Albertans, Canadians and, secondly, some available for export to our American neighbours.

Observations: Edmonton does not accept the argument that because gas is in mounting foreign demand the gas to be used in Alberta for domestic fuel (or for commercial fuel in such places as the City of Edmonton Power Plant) should be allowed to greatly increase in price. This is a natural resource in which Albertans have a vested interest.

We Albertans do not feel apologetic because geography and geology have given us a favoured position with respect to natural gas. Because of the cold winters in Western Canada the amount of fuel, be it coal or gas, that must be consumed to keep our houses warm is considerably greater than the amount consumed in other parts of the country, and it is only by obtaining gas at low prices that the overall cost of space heating in insulated buildings can be kept in line with the cost of such heating in other parts of the country. Some parts of Canada have cheap rail or water transportation, or nearness to markets to keep their commodity prices down and their industries flourishing.

We have in mind such things as freight rates about which we in this part of Canada are vitally concerned, and about which people in all parts of Canada have heard for some time. Here we have a situation in freight rates where Vancouver,

for instance, can enjoy a more favourable treatment in that respect than we in Edmonton, being 800 miles closer to the markets of Eastern Canada. Now, we do not say that we should be necessarily disturbed; all we are concerned about is that if we have an economic advantage in any part of Canada, let us not do all sorts of things about that and disturb it unduly. We feel if Niagara Falls supplies cheap hydro, then let us not worry ourselves as to how we can destroy that, but let us be content that those close to Niagara Falls will continue to have the advantage of cheap electrical energy rates all the while. So it is here in Alberta. We feel where places have these economic circumstances, let us make sure that we do have some advantages of its use.

We somehow feel that Canada cannot be a strong nation unless each and every part of Canada is economically strong, and if there are certain advantages, let us see how they can best be used in that part to let Canada make its best use for the good of all, and particularly for that part of Canada where the advantages are. That is the general premise of our submission.

Lacking such advantages we do have low-priced gas here and we say it should be kept low-priced for a long, long time. In the Edmonton area alone Northwestern Utilities Limited during 1957

sold almost 25,000,000 MCF of gas to commercial and industrial users: the domestic user to the extent of 12 million MCF. We have been advised that the Company expects this quantity to increase very materially in the years that lie immediately ahead. It seems probable to us that any substantial increase in the price of gas to commercial and industrial users can only have the result of discouraging such users from increasing their plant investment in the Edmonton area. In the past few years the Industrial Commissioner for Edmonton advises that commercial construction that has resulted directly or indirectly from oil and gas discoveries totals five hundred million dollars. We are fearful that if the cost of natural gas increases substantially then a most material incentive to industry to locate in the Edmonton area will be gone.

What we say about Edmonton in this respect, we have places to build communities in Alberta, and that is something we are very widely concerned about; these industries that come to Alberta because of special economic circumstances and conditions, and we have tried to attract them and we try to emphasize these conditions to them. They have accepted that fact, I suppose, and some of them have come with that in view. Now, we feel we should do everything in our power to keep faith with these conditions that existed at the time they decided to locate

in the Edmonton area.

Under franchise from the City of Edmonton Northwestern Utilities Ltd. supplies to the Edmonton area (i.e. Edmonton, Beverly, Jasper Place and Edmonton rural) 60,000 customers of whom some 50,000 are domestic consumers who each have, on a conservative estimate, $1,000 invested in gas installations and appliances making a $50,000,000 investment in natural gas by citizens of this area.

Consumption in the Edmonton area through Northwestern Utilities Ltd. facilities alone totals 36,500,000 MCF yearly (1957 figures.) This consumption includes domestic, commercial and industrial gas. Of the total consumption of 36.5 billion cubic feet, some 7 billion cubic feet are consumed at the Edmonton Power Plant alone. Edmonton people have used natural gas as a fuel since 1923 and they have a right to expect that it will continue available to them on reasonable terms.

The figures of the Provincial Department of Mines and Minerals show approximate sales of natural gas in Alberta for 1957 as 112,000,000 MCF. Hence the Edmonton area consumers now use annually about one-third of all the gas sold in Alberta. Northwestern Utilities Ltd. serves much of Northern Alberta as far south as and including Red Deer and the figures are:-

Gross sales by Northwestern Utilities to all types of customers of its system in 1957 .... 46,200,000 MCF

Gross sales by Northwestern Utilities to all types of customers IN THE EDMONTON AREA in 1957 .... 36,500,000 MCF

Some might say that the indirect financial return to the Corporation of the City of Edmonton via Provincial revenue distribution following export of gas will more than compensate for the increased cost of gas to domestic users and commercial users of gas who are located in Alberta. This is not necessarily true for a major population area like the City of Edmonton. The Deputy Minister of Mines and Minerals for Alberta told your Commission that in the 10 years from 1948 to 1957 inclusive Provincial revenue from oil and gas averaged in excess of $72,000,000 annually; yet in that same 10 years the debt of Edmonton increased from $22,857,433 to $127,559,139. Edmonton's population increased rapidly from 1948 on, and the heavy borrowing was the direct result of the population increase and the arrival of additional industry. In the statement of Premier Manning to your Commission at the opening of these hearings it is clear that the Government of the Province is anxious to increase industrialization in the Province and the City Commissioners enthusiastically endorse further industrialization to broaden the economic base of our

Province. However, the industrialization of Alberta actually means industrialization of the municipalities of Alberta, and such progress would entail the influx of population that would concentrate largely in the urban centers, and such concentration will only serve to aggravate the already onerous debt burden placed upon the municipalities to provide the services necessary to our new population. The two points we choose to make from the above figures are:-

1. The Municipal Corporation of Edmonton has no assurance that it will be granted as a matter of right such a share in the revenue accruing to the Province from the export of natural gas as will justly compensate its residents if the gas that they buy each month goes up sharply in price due chiefly to the demand for gas in far places;

2. When the oil and gas discoveries brought industry and people to Northern Alberta a few of the results to the municipal government were:

(i) Immense increases in highway costs and sewage treatment costs and utility extension costs;

(ii) Immense increases in school costs;

(iii) Increased costs, generally for hospitals, etc.

These costs have to be met largely from one major source -- real property assessment. Because this is so the same decade that has seen the Province eliminate the Provincial debt has seen the debt of this city rise to almost six times what it was in 1948, a situation that would be further aggravated if gas export has the effect hoped for by the Province, namely, increased population and industrialization. For that reason the cities and towns of Alberta should obtain greater monetary benefits from the Provincial government through gas sales than has been the case in the past when gas and oil were exported and the benefit SHOULD BE PROPORTIONATE TO THE URBAN EXPENSE CONNECTED THEREWITH.

I would like to indicate, for instance, that we note that some people feel that it is perhaps not fair that some communities such as Edmonton and Calgary should enjoy a preferential treatment by way of low gas costs, and thereby even prohibit export and thereby also reducing the amount of royalties payable to the Provincial Government, because other parts of the Province not using gas will not have the same direct benefits.

Well, we would like to point out to you that the rural population of Alberta, will, by 1961, constitute 61 per cent of the total population of Alberta. The Conservation Board estimates that by

1986 75 per cent of the Provincial population will be served by gas, so that we feel that the consumers in the larger areas or in areas using gas, their low price for gas should not be disturbed, even though it means some increase in Provincial revenues, because we somehow feel that they will be paying more directly for any increased cost of gas which we feel is bound to come as a result of export if it is not controlled than the indirect benefits that will accrue to them as Albertans.

Now, we in 1957 have some figures here that, it seems to us, through the city sales of gas in 1957 our consumers paid something over $7 million. In any circumstances at all which would cause that figure to rise to, say, $10 million or $14 million, looking at the possible royalties that might be accruing to the Province as a result of the export, for instance, the two do not compare favourably at all because we would not like the idea at all of paying for these additional royalties even more than what the Province itself will get. From the estimates we have seen somewhere, and we are not sure they are correct, it seems that it might be that the Provincial Government may be getting from export something over $2 1/2 million a year in additional gas royalties. Well now, if that is all they might be getting, and if we are forced to pay as the result of that something in excess of, con-

siderably in excess of the $7 million that we paid for gas in 1957, as consumers of Edmonton, we do not think it would be a good deal.

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We appreciate that it is not easy to evolve a formula that will give the field investors of Alberta a chance to profit from their investment while still maintaining a price level for gas in Alberta that is weighted in favor of Albertans. We think, however, that the Crown reserves system of field development represents an existing means by which equity can be done to all. If a part of the Crown reserves of the Province abutting proven sweet gas fields and as near as possible to the cities, could only be bought by Alberta utility companies to supply our Alberta needs then utility companies in the business of selling gas to Albertans for Alberta use could be assured of a source of supply at a price that would be maintained at a reasonable level since export gas pipeline needs could not have a call on this part of the Provincial supply. Such a scheme would avoid the unfairness involved in earmarking certain fields wholly for domestic needs because the risk capital of the proven well owners would not then be tied up. The Province would be the trustee of the asset and it could afford to await its profit from a gas pool when a private well owner could not and should not expect to await his return. Another way the Province could ensure not only supply but supply at reasonable prices to Alberta users of gas would be for the Government to exchange drilling sites

near its major population centers and take them off the potential export market, giving oil and gas companies other acreage in good areas not so close to the cities in the exchange. Such wells or well sites should then be earmarked for use by domestic gas companies serving Alberta industry and Alberta home owners.

We know there are many difficulties involved in this proposition. We know that there are several ways in which people attain lease rights to gasfields. We know one of the ways is that when you explore and develop oilfields that you have gas rights for them, but they are predominantly oilfields. That is when the Crown reserve system seems to work the best. However, we do know when that is not the case and only gasfields are found and developed, then it is a matter of licenses which may take the whole area. We think it should be very carefully looked into. We do not think the private developer ought to be asked to await his proper return on what he has spent money on to develop, but if there is any trusteeship involved in this whole matter of earmarking or dedicating certain gasfields for large areas of population, then I think that trusteeship should be in the hands of our Provincial Government. Again, I repeat, we are not sure of the workability of this scheme. It is an idea which we had and which we think experts

and technicians ought to very carefully investigate and see if it is workable. We are sure, however, that we do not want anything that would cause an increase in the price of gas to our consumers. That we are sure of, sir.

The Federal Government could make it a condition of export that any Province wishing to grant export gas permits should withhold from sale such a part of its Crown reserves in probable or proven fields as would ensure not only a supply but a supply at a fair price to those who by reason of residence in the field area had a right to expect some protection from the normal effects of demand upon commodity price. Perhaps this would involve a Federal Regulatory Board with terms of reference comparable to those of Public Utility Boards such as exists in the Province of Alberta.

We are thinking, as illustrations of the kind of board that may be of some use in this matter, of the Board of Transport Commissioners or the Federal Power Commission in the United States. That is something that might be looked into.

The other obvious benefit to the Canadian economy of such a plan as we have suggested would be that companies wishing to use comparatively cheap gas for processing purposes available from local gas utility companies would be encouraged to locate in the Province where the gas was being extracted

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instead of at distant centers often in foreign lands.

In 1957 there was about 62,000,000 MCF of gas flared in Alberta. Thus well owners flared 135% of all the gas that was sold by the Northwestern Utilities system in Northern Alberta.

We would like to make a few corrections here; I am not sure the amended copies contain them.

We appreciate that much of this flaring is standard field practice and not all gas can be economically gathered yet we worry with cause about the waste of gas that may accompany large-scale oil and gas extraction when the tempo of such extraction is stepped-up to the vast figures that export companies are seeking for the Canadian and American market.

Now, we know that the Conservation Board is actively taking steps to reduce the amount of waste, and we know that this particular flaring is dependent on the extraction of crude oil; but, it seems to us, that one of the ways in which that can be reduced to a minimum would be through an adequate system of storing and through the speed-up, if you like, or the acceleration of the building of a grid system to bring this solution gas elsewhere and have it stored for use. Northwest Utilities have made such an application in the building of a

pipeline to Edmonton, which I think is going to help, but that is something that we are bringing in and showing you that we have noticed, and we feel it should not go unnoticed because it is quite a huge amount of gas that is being flared at the present time -- knowing full well it is going to be reduced in, perhaps, a short time.

We have dealt herein with the principles that we believe are valid and highly important and the details can be harmoniously and equitably settled if the principles can be agreed to.

We are not so sure they can be harmoniously settled, but it seems to me ways and means might be found.

THE CHAIRMAN: I think you missed a paragraph.

MAYOR HAWRELAK: I am sorry, but it is the intention that that paragraph be deleted, and we advised your Commission several days ago we would like that paragraph completely taken out.

THE CHAIRMAN: I am sorry, it had not been physically deleted in my copy.

MAYOR HAWRELAK: 1. We believe that the development of natural gas resources must be carefully planned and closely supervised by the Provincial Government and that the distribution of the revenue that will follow such export must be

distributed in proportion to the corresponding problems that the development has brought to urban municipalities in Alberta.

2. Merely because far away consumers of natural gas are willing to pay higher prices and will use larger quantities than Albertans is no justification for a substantial increase in the price of gas to Albertans. If the only wells from which natural gas for Alberta use can be bought for the cities and towns of Alberta are the very wells that can sell instead for export then the price paid locally for gas is bound to increase sharply and steadily and the contracts entered into with field owners of gas by such companies as Alberta and Southern show this to be the case.

We are informed that the cost at the well-head, for instance, in the case of Northwest Utilities in the Viking-Kinsella field, which is the large field supplying dry and sweet gas to the Edmonton area, is something between 5 and 7¢. We are also informed that an agreement was signed between Northwest Utilities and Alberta and Southern for the purchase of gas in the Pembina field starting at 13 1/2¢, and with an escalation clause that would bring it up to 21¢ in a period of 25 years. That price includes, perhaps, some processing and cost of gathering, but we cannot help but feel that there is the handwriting on the wall that they are

paying more for that gas in the Pembina field than perhaps they might have been forced to pay had not another company been in the field to try and compete for the purchase of that gas. We were told, and that is our information, that the reason Northwest had to pay so much is because that is the best price they could get in the deal with Alberta and Southern, and perhaps it can be assumed that the only reason they could sell to Northwestern was because that was the best price they could get, but, to arrive at that price somebody else may have been there to make it competitive. We understand that was an export company, and competition arose from that. That is the very thing we are fearful of. We think we should safeguard price increase for Albertans, and we feel if there is export and if it is not controlled in some way, either through dedication of fields or -- I don't know -- some other means perhaps your Board can devise and recommend, then we are going to be faced with increased consumer price.

3. Gas export to the United States is desirable as we are assured that an adequate reserve exists in Alberta for Alberta needs, but we think it is only proper that every Canadian market for Alberta gas that can be reached on a sound business basis should be considered before the whole export gas amount is contracted to foreign buyers.

When we say it should be on a sound and businesslike basis without subsidies, we feel that there should be no consumer subsidy nor should there be any government subsidy. We feel that wherever gas is sent, to whatever centres it is sent and exported, including Canadian centres, then the price they pay at the other end should be the kind of price that you pay to make this proposition a workable and businesslike proposition.

4. The same reasons that led to the creation of Public Utility Boards in Provinces indicate the wisdom of a Federal Public Utilities Board that would be concerned with natural gas.

For instance, we read in the press that there was a submission made to your Commission here that the price of gas at Vancouver was somewhat higher than the price for gas exported across to our American neighbours. Well, we feel if that arrangement was handled by a public utility company, that could not take place, because whatever the costs are of transmission, or the cost of building the line, that would be properly prorated on the supply and capacity of gas, and if the pipeline costs are so much, you are going to arrive at a rate which will bring you back the cost and give you a fair return on your investment. That is the kind of thing we have in mind.

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Finally, Edmonton is at a disadvantage when competing for industry with cities located closer to the population concentrations of Canada. Such industries as do locate here to make use of Alberta oil and gas deserve the same assurance that we seek for our private citizens who consume gas, namely, protection from a steady escalation in natural gas costs brought about by the demand for the gas. In that connection we have suggested that the Province is the logical trustee of a part of this natural gas reserve and should be required to reserve a part from any export so that it is in place at an attractive price for those individuals and businesses who make Alberta their home.

THE CHAIRMAN: Thank you very much.

BY MR. PATTILLO

Q. Mr. Mayor, immediately prior to Leduc, what was the population of Edmonton?

MAYOR HAWRELAK: I do not recall the exact figure, but I can say this: between 1948-57 the population of Edmonton has doubled. In 1957, as of the first of April, it was 238,353, so you can just take half of that and call it the population in 1948.

Q. How much has the total assessment

of the city increased in that time?

MAYOR HAWRELAK: I am not able to give you accurate figures on that, but the assessment, as of 1957, is $272 million. I would just guess, now, and that is all it would be because I do not have the figures in front of me. It would be, perhaps, $130 million.

Q. How much has the bank clearance gone up in that time?

MAYOR HAWRELAK: I think the bank clearance has gone up in the same ratio.

Q. And the income of the population of the City of Edmonton, the gross income?

MAYOR HAWRELAK: It is a hard figure to determine; I have not seen that figure determined anywhere as to what the gross income of any city is. I will say this: if it is your object, and, perhaps, I should not be speaking of what your object is, perhaps you might tell me yourself?

Q. I will get around to it.

MAYOR HAWRELAK: But we are not saying that this development and the discovery of oil and gas was not a great thing to the general economy of Edmonton, Alberta and Canada. We are speaking from the standpoint of the municipal treasury.

Q. I appreciate that. Mr. Mayor, you have lived in Edmonton for a good many years. Prior to Leduc, what did it cost to heat your house with

gas a year?

MAYOR HAWRELAK: The price of gas has not gone up very much. It did go up in 1952 at the last gas rate hearing. As I recall, the average price per 1,000 cubic feet for domestic purposes is about 36¢. I could easily look at the tables here -- we have the Northwestern tables for that year -- but there has not been a great change at all in gas prices since the discovery of Leduc. I might be corrected in that; we have the figures here.

Q. You own a house in Edmonton?

MAYOR HAWRELAK: Yes.

Q. You did, prior to Leduc and you do today, the same house?

MAYOR HAWRELAK: Not the same house.

Q. How big a house was it before Leduc?

MAYOR HAWRELAK: Five rooms, Mr. Pattillo.

THE CHAIRMAN: This is a rough Commission, Mr. Mayor.

MAYOR HAWRELAK: I like these questions, they strike home. That is why we chose not to talk to you about technical things.

MR. PATTILLO: Q. What I want to get at: about how much does the average householder have to pay to heat his house with gas in an ordinary year?

MAYOR HAWRELAK: I have seen some figures which are around $70, $73, I think. That is the

figure I have seen.

Q. I think that would be about right.

You believe, and the Commissioners believe, in private initiative and private enterprise.

MAYOR HAWRELAK: Very much so.

Q. And you agree with me that you must have incentive to have it?

MAYOR HAWRELAK: Yes.

Q. You do not want the producers of gas in the Province of Alberta to subsidize the City of Edmonton?

MAYOR HAWRELAK: No, we say so.

Q. You would agree, if part of their lands were set aside for use by the City of Edmonton to keep the gas prices down to $70 a house a year, there would not be very much incentive for these producers having these lands to search for gas?

MAYOR HAWRELAK: What we say here is this: if gas is discovered in connection with the discovery of oil, under the present Crown reserve system, as we understand, when he applies for the lease half of that reserve is handed over to the Government and the other half retained by the developer. We say it is the half which the Crown retains from the lease that should be used for the purpose of dedication. We do not think that the private enterpriser ought to be held responsible for any of these things. We think if he is allowed to go in there and spend his

money he should be allowed a reasonable profit from his investment.

Q. Let us follow out your idea: these lands are handed back to the Province. As yet, they have not been developed. It is not certain whether gas is there or not. Who is going to develop it?

MAYOR HAWRELAK: I think when the time comes and when we need some of the gas in the area, I am speaking of lands that we know have available reserves of gas, because, before the Government grants a lease, for instance,the people have spent X number of dollars on the reservation, and at that point the developer seems to think there is gas and he says to the Government, "I am not prepared to accept the lease under the basis of the present system; I will checkerboard this thing and we take half and you take half."

Q. And then they put it up for sale.

MAYOR HAWRELAK: They do now, but we say, in our case, they should not.

Q. Then you say the Government should subsidize the people?

MAYOR HAWRELAK: We want it to be a trustee and get the money later instead of now.

Q. Who is going to get the money later?

MAYOR HAWRELAK: The same development company, when it comes time to use it from the reserve.

Q. How are they going to pay for it?

Are they going to be required to bid for it against other people?

MAYOR HAWRELAK: We will cross the bridge when we come to it, and it may not have to be crossed for 15 or 20 years. I am speaking of the Edmonton area itself.

Q. Let me ask you this: would you not agree if gas was found in the vicinity of the City of Edmonton and a price was paid for it at the wellhead or at the gathering point in the field, and then you were concerned with the costs of transmission, but the people in Edmonton would, naturally, get their gas much more cheaply than the people, say, in Winnipeg, or the people east of Winnipeg who lived many, many miles away and must pay that cost of transmission; do you not think, in the normal economy of a country, that that is very akin to the freight rate problems you are talking about? You have the advantage of location and the fact that transmission cost is low; should you have any other advantage?

MAYOR HAWRELAK: Yes, I think there is such a thing as we are claiming here. We have a vested interest in the gas if it is in our area when we contact industry and say, "Come and spend your millions of dollars in plant establishment because we have cheap gas." We feel, because our economy is built on that phase of the economic circumstances

in which we find ourselves, that there is any reason to disturb that. For instance, when we find gold up at Yellowknife, which is up north in the hinterland, we do not hesitate to make the price of gold so as to make it profitable for those people to mine there. We do not move that anywhere else. The same thing goes for copper in British Columbia; they are not moving the copper mines, they are paying their way. But the Government sort of feels that they should employ people there and should expand and develop the area, so they are willing to pay so much per month to keep them there.

Q. What I am suggesting to you, Mr. Mayor, is this: if the City of Edmonton has the phenominal growth that it has in population, assessment and wealth all arising out of the efforts of people who have come here searching for oil and gas, that if they still continue, because of their location, to be able to get gas more cheaply than any other place that wanted it, I should think the thing would be reasonably satisfied?

MAYOR HAWRELAK: You know how human nature is, Mr. Pattillo. If that increase is caused by a factor that we think is unfair, and we are quoting you some examples, if that increase is caused by the additional cost of development, capital cost, for instance, that might accrue as a result of paying more, obviously these are good and proper

legitimate costs, but when they accrue just because somebody two or three thousand miles away feels he can still import the gas into his community, because it is a competing fuel, and he can make a profit and he competes for the supply within Alberta and that is the only reason, we think that is not a fair reason.

Q. In accepting your argument, would you not be restricting the incentive to the producer? Would you not be restricting the income to the Province which, as I understand it, everybody benefited in last year to the tune of, at least, $20?

MAYOR HAWRELAK: Well, Mr. Pattillo, with respect to the $20 ---

Q. Would you not, Mr. Mayor, in following your philosophy?

MAYOR HAWRELAK: Except this: If I see my citizens in Edmonton having to pay $7 million in 1957 and if, because of the competition which is created by an importer in the United States, say, San Francisco, for the gas produced here in Alberta near Edmonton -- if, because of that fact alone, my people are asked to pay an additional $7 million and our Province gets, as a result of that, $2 1/2 million in direct revenue, somehow I do not think it is a good business deal.

Q. That is a different thing. If it is not a good business deal, I accept your premise.

Assuming it is a good business deal, assuming you go by the fact knowing the incentive for the producer increases enormously the amount of exploration work that will be done in this Province and increases enormously the known wealth of the Province, is that in the interests of the citizens of Edmonton?

MAYOR HAWRELAK: Yes, definitely; directly and indirectly, and that is why we have tried, in all sincerity, in the presentation of our view to say we do not want to interfere with any incentive to the private developer or the private enterpriser. We do feel, in this particular instance, there is a matter of trusteeship that could be exercised and that should be in the hands of our own Provincial Government. We also feel it means no loss to them in the long pull; the ultimate result to the Provincial Treasury will be, perhaps, the same, but the immediate result to local consumers will be great.

Let me repeat, again, that any expenditures made in developing Alberta in the exploring of our oil and gasfields are good expenditures. They bolster our economics and fortify our economy. We do concur in, and endorse, the Premier's statement as to that particular matter.

THE CHAIRMAN: Would you admit that the development, the incentive -- a further incentive

to develop the oil and gas resources in this Province would mean an increase of material wealth to the citizens of the Province and, very simply, an increase of population in the City of Edmonton, and that would not be a hardship, would it?

MAYOR HAWRELAK: To the City of Edmonton it would be a hardship, but that is a different matter entirely. It would certainly be a hardship but it is a good kind of hardship.

THE CHAIRMAN: Like sweet gas is a good kind of gas?

MAYOR HAWRELAK: A growing problem, although it can be a very serious one, is still a good kind of problem to have.

MR. COMMISSIONER HARDY: Mr. Chairman, we are not particularly interested in the rate structure of the City of Edmonton, but some days ago we had a discussion here concerning controls, and one of the controls in the Province, at the present time, is through the Board of Public Utility Commissioners, and we have not had presented to us the details of how they operate in controlling rates. I was, therefore, wondering if Mayor Hawrelak would give us a brief statement as to just how the rates are negotiated between the Gas Company and the Board of Public Utility Commissioners?

THE CHAIRMAN: Before answering that question, I think it would be a good thing if we had a ten minute break.

---A short recess.

THE CHAIRMAN: I think, probably, you remember the last question, Mr. Mayor.

MAYOR HAWRELAK: Yes, sir, in connection with the rate settings.

THE CHAIRMAN: Yes, I think Dr. Hardy asked you about the setting of the rates.

MAYOR HAWRELAK: Sir and Dr. Hardy, to the best of my information on how the rate is set, it appears there are several factors used and one, of course, is the rate base which, as I understand it, has something to do with the amount of money used in a business plus recovery of costs of operation, which would include depreciation costs, and having the rate base agreed upon, then, knowing the quantity of gas sold and that to be sold at a rate which would give a fair rate of return.

Now, in the case of Northwest Utilities in Edmonton, that rate of return is 7½ per cent.

I might say that in 1952, when the hearing was held in Edmonton, we held out that the 7½ per cent, or the application, as I recall it, at that time, was something in excess of that, we thought it was too high and we made representations accordingly. But the rate is 7½ per cent and, in setting the sale price of the gas, Northwestern Utilities, the gas company, our utilities there, distributes this price in three categories of consumers, industrial consumer, domestic consumer and the commercial

consumer. In each of these, especially in the industrial and the commercial consumers, as I understand it, they use the load factor as being a very important factor in determining the rate, which is a relationship, as I understand it, between the average daily consumption of gas during the year and the maximum required for any day during the year, and that load factor is what they are using to make sure that that is all required, at any given time, a peak demand for gas; what they must pay for that peak demand.

Now, those are some of the factors that, to the best of my knowledge ---

MR. COMMISSIONER HARDY: Mr. Mayor, how long do your contracts run before there is a review of rates?

MAYOR HAWRELAK: It is subject to application by either party.

MR. COMMISSIONER HARDY: As an example, take the proposed pipe line to Pembina and the increased rates that may be paid to the producer at Pembina.

You have no bargaining position with the gas company or the public utilities commissioners on whether those are fair rates or not?

MAYOR HAWRELAK: No, Dr. Hardy, we have not. I believe that if, in the cost of operation, an item appeared to be flagrantly out of reason,

then somebody could raise the question before the Board and say, "Here is an item that they include in the cost of operation which is unreasonable."

But I have no doubt if the gas company were able to show that the cost of the gas is x cents then that is a figure which has to be used in the calculation of the costs of operation.

MR. COMMISSIONER HARDY: Thank you.

MR. COMMISSIONER LEVESQUE: Mr. Mayor, in your brief, page 4, that debt of $127 million, is that a net funded debt or gross?

MAYOR HAWRELAK: That is gross, including the schools.

MR. COMMISSIONER LEVESQUE: That is the amount of the sinking fund?

MAYOR HAWRELAK: Our general debt amounts to about $55 million, which is chargeable to the taxpayer on a mill rate structure.

MR. COMMISSIONER LEVESQUE: With no sinking fund?

MAYOR HAWRELAK: Yes, we have a sinking fund for all of it, but that will be the net after so much is provided for different things.

MR. COMMISSIONER LEVESQUE: What is the school debt?

MAYOR HAWRELAK: The school debt will be about $27 million. You see, we have -- our debt is divided into three classifications: one, utility

debt; two, local improvements, that is chargeable to the taxpayer directly, and three, general debt. The general debt is about $55 million, as I mentioned a minute ago; the local improvement debt is about $17 million and the $32 million or $33 million is the utility portion, which is charged at the municipal level. The rest of it there is the school board portion.

MR. COMMISSIONER LEVESQUE: So your net debt would be about $80 million?

MAYOR HAWRELAK: Well, no. It all depends on what you are counting. The school plus the general debt municipality, yes.

MR. COMMISSIONER LEVESQUE: So you have to take off the sinking fund?

MAYOR HAWRELAK: It is taken off.

MR. COMMISSIONER LEVESQUE: At $127 million, taken off?

MAYOR HAWRELAK: Yes. When I give you the figure of something over $30 million of a utility debt, we are fortunate, in Edmonton, that we own five of our operating utilities and we have owned them right from the start, really, of the operations in Edmonton, and those utilities are well able to pay for the cost of their expansion and, at the same time, to alleviate taxation to the proper taxpayer.

In 1957, for instance, our utilities -- I

don't know that you want this figure, but our utilities made a substantial surplus, substantial surpluses, and out of this, some $2,200,000 were used in direct reduction of the tax rate of a property taxpayer.

MR. PATTILLO: More than $7\frac{1}{2}$, sir?

MAYOR HAWRELAK: I didn't really figure it out, Mr. Pattillo.

THE CHAIRMAN: Well, Mr. Mayor, I can assure you that the Commission sympathizes with your position as one of the most prosperous cities in the Dominion of Canada. We all want to thank you and your colleagues for going to the trouble which you did in preparing this brief and it certainly contains some very interesting thinking and ideas which you have, frankly, put forward as one which has not been thought completely through but as suggestions, and we appreciate having it very much.

We are sorry we could not sit in Edmonton at this time and hope that it has not inconvenienced you and your colleagues too greatly in coming to this other city in Alberta which is also so prosperous and healthy and where the citizens have been most kind to us.

Now, I don't think that we should attempt any further brief this afternoon, Mr. Parkinson.

MR. PARKINSON: There was some thought,

Mr. Chairman, that Alberta Trunk Lines might read their brief, even though they would not be cross-examined upon it. They will have some difficulties, too, in appearing tomorrow, since they are expected at a hearing before the Alberta Oil and Gas Conservation Board. You might want to inquire of their counsel how they propose to get out of their difficulty.

MAYOR HAWRELAK: Sir, before we retire, I do want to thank you for the privilege and opportunity we have had in presenting our ideas here. We realize and appreciate the importance of your Commission and the arduous tasks with which you are faced in bringing about a solution to some of the problems that you are going to deal with, but we have faith and confidence in our fellow Canadians in meeting these problems and you can be assured that we have also faith and confidence in your Commission to bring about the proper recommendations to do the right thing by Albertans and by Canadians, firstly, and for Canada secondly, in whatever way you see fit to do.

THE CHAIRMAN: I can assure you, Mr. Mayor, we will do our best. I cannot say what that will amount to, but at least it will be our best.

Thank you very much indeed for coming.

MR. PATTILLO: Mr. Chairman, the Alberta Gas Trunk Line Company counsel have advised me that they will be able to attend tomorrow and it is simply a matter for you and the other Commissioners to determine whether we should have them read their submission now and proceed with examination in the morning or whether we should postpone the whole thing until the morning.

THE CHAIRMAN: Well, the members of the Commission were hoping to have a meeting among themselves and not many opportunities occur in which to do that and we had proposed to do it as soon as we could foregather after this session this afternoon. If we go on, I do not suppose we will get the brief read in by four-thirty and I think most of us are a little weary, in any event, Mr. Pattillo.

MR. PATTILLO: Right, Mr. Chairman.

THE CHAIRMAN: I think it would be preferable if the brief were dealt with tomorrow morning.

MR. PATTILLO: Thank you, Mr. Chairman.

THE CHAIRMAN: I am very sorry that I will not be here, and I want the press and others to realize that the reason is that I must go east because of the death of a very close friend and colleague, Dr. Thomas Hogg, yesterday, very suddenly, and I just wanted to say publicly that that is the reason I must go. We were going to terminate our

hearing, in any event, on Friday, so it is impossible, really, for me to get back.

I know, however, the Commission will be officially thanking Calgarians and Albertans generally for their hospitality and cooperation during this, our first visit, and we hope to come back. I want to personally thank you for all your courtesy.

Unless you have something, Mr. Pattillo, we will adjourn.

MR. PATTILLO: No, that is all, Mr.Chairman.

THE CHAIRMAN: We will adjourn the hearing of the Commission until 9.45 tomorrow morning.

---Whereupon the hearing adjourned at 3.58 p.m. until 9.45 a.m., Wednesday, February 26, 1958.

M. [illegible]

ROYAL COMMISSION

ON

ENERGY

HEARINGS

HELD AT

CALGARY,

ALTA.

VOLUME No.: 18

DATE: FEB 26 1958

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ROYAL COMMISSION

ON

ENERGY

Hearings held at Calgary,
commencing Monday, February
3, 1958, at 10.00 A.M.

PRESENT:

Mr. H. Borden, C.M.G., Q.C. - Chairman

Mr. J.L. Levesque, - Member

Mr. G.E. Britnell, - Member

Mr. G.G. Cushing, - Member

Dr. R.D. Howland, - Member

Mr. L.J. Ladner, Q.C. - Member

Dr. R.M. Hardy, - Member

COMMISSION COUNSEL:

Mr. A.S. Pattillo, Q.C.

Mr. Miles H. Patterson.

Mr. J.F. Parkinson -- Secretary to the Commission.

Major N. Lafrance -- Assistant Secretary to the Commission.

APPEARANCES:

Representing Alberta and Southern Gas Co. Ltd.:

Mr. R. A. MacKimmie	-	Counsel
Mr. Alton T. Tyler	-	Supervising Engineer, Canadian Bechtel Corporation

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EXHIBITS		Page
C-26-1	Supplementary Submission by Alberta and Southern Gas Company	2503

APPEARANCES:

Representing The Alberta Gas Trunk Line Co. Ltd.:

Mr. W. A. Howard - Counsel

Mr. J. C. Mahaffy, Q.C. - General Manager

APPEARANCES:

Representing The British American Oil Co. Ltd.:

Mr. W. R. Sinclair	-	Counsel
Mr. Edward D. Loughney	-	Senior Vice-President
Mr. Floyd D. Aaring	-	Zone Production Manager
Mr. James A. Strand	-	Petroleum Engineering Supervisor
Mr. Sydney J. Anderson	-	Production Engineering Advisor
Mr. Richard E. Martin	-	Reservoir Engineer
Mr. Stanley G. Pearson	-	Manager, Exploration Department
Mr. John S. Wonfor	-	Chief Sub-surface Geologist
Mr. Nicholas M. Ediger	-	Senior Staff Geologist
Mr. John R. Yarnell	-	Manager, Services Department
Mr. E. Eric Hargreaves	-	Supervisor, Budget and Statistics

ANGUS, STONEHOUSE & CO. LTD.
TORONTO, ONTARIO

Wednesday,
February 26, 1958

---On resuming at 9.45 a.m.

---Mr. Commissioner Levesque in the chair.

---The Chairman and Mr. Commissioner Cushing not present.

THE ACTING CHAIRMAN: For the benefit of those who were not here at the adjournment last night, I want to point out that Mr. Borden had to go back to Toronto due to the sudden death of Dr. Hogg. Dr. Hogg was the ex-chairman of the Ontario Hydro Electric Power Commission, a personal friend of Mr. Borden, and one of his colleagues. What has upset Mr. Borden mostly is that Dr. Hogg died while placing a telephone call to speak to Mr. Borden in Calgary. You will understand, therefore, why he had to leave last night.

Before we start, Mr. Pattillo, on Alberta Trunk, I think Alberta and Southern have something to file.

MR. PATTILLO: Yes, Mr. Chairman. The Alberta and Southern Gas Company have a supplement to their submission which we want to put in, and it is only a matter of two pages of material which I think should be read into the record, Mr. Chairman,

and Mr. MacKimmie is here, the counsel for the company, and he has with him the gentleman who will be reading it into the record.

My suggestion is that the document be marked C-26-4.

---EXHIBIT NO. C-26-4: Supplementary submission by Alberta and Southern Gas Company.

MR. MacKIMMIE: May it please the Commission: Mr. Chairman, this supplementary study will be presented by Mr. Alton T. Tyler, a supervising engineer with Canadian Bechtel Corporation. Mr. Tyler is a civil engineer and has worked with Texas Eastern Pipeline Corporation, El Paso, Michigan and Wisconsin Pipeline Company, and he worked on the preparation of this table and text, and with other engineers. With the Commission's permission I would ask Mr. Pattillo if he would like to have Mr. Tyler read the discussion.

MR. PATTILLO: Please do so.

MR. TYLER: Forecast of changes, year by year, in Canadian reserves of disposable pipeline gas, reflecting

(1) Current forecasts of Canadian requirements

(2) Current trends in establishment of new reserves

(3) Effect of existing export permits and certain proposed new export permits.

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

Discussion: Alberta and Southern Gas Co. Ltd. submits the attached Table to show the combined effect, year by year, of continuing discoveries of new natural gas reserves, Canadian usage, and a limited amount of export, on the remaining Canadian gas reserves.

It is assumed in this table that the establishment of new reserves will continue at about the same rate during the next ten years as has been experienced in the past ten years. Thereafter, a gradual decline in rate of establishment of new reserves is assumed.

This appears to be a conservative estimate, in view of the probability of acceleration in the establishment of new reserves through development drilling as soon as an assured immediate market for gas is provided through the approval of additional gas exports.

The reserve figures in the table also appear to be conservative when compared with the forecasts of total potential reserves submitted to the Royal Commission on Energy by the Alberta Oil and Gas Conservation Board and the Canadian Petroleum Association.

In view of the geology of Western Canada and the small fraction of the total potential reserves in that region which has been established thus far, it is much more realistic to base forecasts

of volumes of gas to be available for use in future years on a continuation of discovery trends as was done in this table, than it is to assume that suddenly there will be no new discoveries.

In the United States, where the natural gas industry is over thirty years old, proved recoverable reserves of natural gas attained a new peak of 237.8 trillion cubic feet at the end of 1956. The increase of 14.1 trillion during the year represents the largest annual gain since the American Gas Association Committee on Natural Gas Reserves initiated the preparation of consistent annual estimates in 1946, and was achieved in spite of record net production of 10.9 trillion cubic feet. During the year, 2.3 cubic feet of gas were added to reserves for every foot withdrawn, a higher relationship than the 1.99 which the industry had attained in the post-war decade, 1946-1955.

There is no reason to believe that the Canadian industry, with proper stimulus, cannot experience the same type of growth.

Trans-Canada Pipe Lines Limited's forecast of gas requirements for Eastern Canada was used. The requirements for Alberta were taken from the January 1957 report of the Alberta Oil and Gas Conservation Board. Long range forecasts for British Columbia and Saskatchewan are not available. The requirements for these two

provinces used in the table are allowances consistent with the Trans-Canada and Alberta Oil and Gas Conservation Board long range forecasts.

Attachment Nos. 1 and 2 give the method and references for calculating the recoverable reserves for Western Canada as of January 1, 1958. Attachment No. 3 lists the source of the export data used in the table.

Our purpose in submitting this table is more to present a method of determining the adequacy of Canada's gas supply than it is to present conclusions based on specific figures. However, we believe that some very significant conclusions can be drawn from the table.

Conclusions: The table indicates that during the thirty-year period covered by the table and under the assumed conditions:

(1) The very large forecasted Canadian usage can be supplied.

(2) A substantial amount of exports over and above existing permits can be made.

(3) The established reserves at the end of the period will be 50% higher than they are today.

(4) The established reserves in the thirtieth year will be approximately forty-five times the forecasted Canadian usage of gas for domestic and commercial purposes in

that year.

(5) The additional new export permits listed in the table can be approved and still have gas to supply Canada's requirements for thirty years, with a liberal margin of safety to provide for unforeseen contingencies.

TABLE 1

Forecast of changes, year by year,
in Canadian Reserves of disposable pipeline gas.

(Please see Exhibit C-26-4)

Attachment 2

ADDITIONAL RESERVES IN PROVINCE OF ALBERTA

Due to Revised Estimates and New Discoveries

In Billions of Cubic Feet at 14.4 Psia Base

	1 Oil & Gas Conservation Board	2 Ralph E.Davis
Acheson	90.6	60.4
Beaverhill Lake	93.0	139.4
Calgary-Kathryn	383.0	500.0
Carbon	203.0	206.9
Crossfield	150.0	434.1
Foremost	21.0	15.0
Fort Saskatchewan	120.0	104.4
Harmatton-Elkton	920.0	857.0
Homeglen-Rimbey	770.0	948.2
Jumping Pound	518.0	522.9
Minnehik-Buck Lake	102.0	125.3
Nevis	550.0	649.1
Okotoks	135.0	205.8
Olds	60.0	205.5
Paddle River	17.0	66.0
Pembina	431.0	307.0
Pine Coulee(Parkland)	15.0	47.7
Pine Creek	202.0	238.0
Sarcee	150.0	480.8
Turner Valley	340.0	290.0
Viking-Kinsella	455.0	399.0
Waterton-Castle River	700.0	970.0
Westerose	151.0	118.1
Westerose South	1,000.0	1,300.0
Westlock	202.0	145.2
Windfall	323.0	264.0
Wizard Lake	90.0	119.5
	8,191.6	9,719.3

Total Additional Reserves 1,527.7

1 Appendix I, Table I-1 - submission to Royal Commission on Energy

2 Reports IV A, IV B, IV C and IV D in Volume IV - application by Alberta and Southern Gas Co.Ltd. to Oil and Gas Conservation Board.

Attachment 3

Source of Export Data used in Table I

	Billions of Cubic Feet at 14.73 psia Base
Westcoast Transmission - Huntingdon, B.C.	
125 bcf. each year for 20 years, starting 1958	2,500
Westcoast submission to Borden Commission, page 28	
Canadian Montana Pipeline	
A maximum of 20 bcf. per year, using all the gas from the Black Butte, Comrey, Manyberries, Pendant d'Oreille and Smith Coulee fields. Estimates for this study to be for a 15-year period	300
Trans-Canada Pipe Lines	
Total 2,194 bcf. for 29 years, starting in 1959 to 1988	2,119
Exhibit 4 in Commonwealth Service Inc. report attached to Trans-Canada Pipe Lines Ltd. submission to Borden Commission dated February 19, 1958. Estimate for this study does not include 1988.	
Alberta and Southern Gas Co. Ltd.	
at 164.250 bcf each year - total 4,110 bcf. for 25 years, starting 1961	4,106
Application to Alberta Oil and Gas Conservation Board, October 22, 1957	
	9,025

MR. TYLER: In the reserves for 1958, 23,600 billion cubic feet, at 14.73 psia, was taken from the Conservation Board information table R-1, plus an allowance for additional discoveries in certain fields as presented by the Ralph E. Davis submission in the Alberta and Southern case, which is shown in Attachment 2, plus reserves in British Columbia and Saskatchewan as presented in the Westcoast submission and the Canadian Petroleum Association submission. Taking that figure of 23,600, we added the additional reserves for the year 1958, and for discoveries in Alberta we used the figure of 1800 which, in our opinion, is very conservative. The figure given by the Conservation Board in their submission on page 81 is 2,160 billion. Therefore, we are using a very conservative figure. The figures in British Columbia, we feel, are very conservative in view of the testimony given here in the Canadian Petroleum Association submission by Dr. Hume on the potential of the areas. We have also provided for reserves beyond economic reach. For the Canadian requirements, for Alberta we used the figures of the Conservation Board. For British Columbia, we used the first four years through 1961 from the Westcoast submission, and then calculated their requirements through 1988 based on percentages used by Trans-Canada, which we figured were high. In Eastern Canada we took

the figures in Exhibit 4 in the Trans-Canada submission.

For export we used the Westcoast volumes for British Columbia; and the Canadian-Montana Pipeline, which is given in the Conservation Board's information. The Trans-Canada Pipe Lines requirements, we have shown here the export they have requested for Emerson, and then we have the Alberta and Southern Gas Company in their submissions to the Conservation Board.

I took the reserves at the beginning of the year, and add the additional reserves discovered during the year, less the Canadian requirements and export requirements, and you come up at the end of the year with 25,511 billion cubic feet, which is carried forward to the next year and carried through the year 1987 up to the beginning of 1988, and at the end of 1987 we end up with a reserve figure of 33,025 billion cubic feet, which is approximately 50 per cent greater than we started off with. We also, in our new discoveries, in the trend, we carried forward approximately 10 years the same discovery rate, and after that we reduce it until in 1987 we have new discoveries of 600 billion.

MR. PATTILLO: On table No. 1, what would be the total amount of gas that you say will be discovered in this period of 1958 to 1988?

MR. TYLER: The total amount discovered

in the period from 1958 through 1988?

MR. PATTILLO: Yes.

MR. TYLER: It is given in the total column, 55,040 billion, which, when added to the figure we started with, gives a total of 78,600 billion which is less than the figure estimated by the Conservation Board for that period.

MR. PATTILLO: That is 78 trillion?

MR. TYLER: 78.6 trillion, or 78,600 billion, which is within the range estimated by the Conversation Board: they predicted 60 to 80 trillion.

MR. PATTILLO: That is all that I have to ask, Mr. Chairman,

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MR. COMMISSIONER HOWLAND: Mr. Chairman, I would like to ask Mr. Tyler a question.

Mr. Tyler, do you have the figure on the United States for 1957?

MR. TYLER: No, sir, I do not at this time. I have a 1957 edition of American Gas Facts. This is a publication by the American Gas Association for 1956. I do not have the 1958 edition.

MR. COMMISSIONER HOWLAND: Could you give me the 1955 figure?

MR. TYLER: No, the only edition I have is the 1956 edition.

MR. COMMISSIONER HOWLAND: I only ask because I looked at that sometime ago and found that the 1956 figure was an unusually high figure, I believe. I am not sure but I just have that impression, that 1956 was one particular year when they had a very large discovery. I do not want to put this in evidence because I do not know; I just have that impression. Would you just check that for me?

MR. TYLER: Yes.

MR. COMMISSIONER HARDY: Why did you take an assumption of 10 years in your second paragraph?

MR. TYLER: We feel that figure of 10 years is a very conservative figure, especially if export permits are granted which will provide a stimulant for exploration and new discoveries. With this table we try to take a very conservative

attitude on the reserve figure and on the high side on the market requirements.

MR. COMMISSIONER HARDY: I gather you were even more conservative than the Conservation Board figure given to us by the Conservation Board. We just do not know how conservative everybody has been. Why have you been more conservative than the Conservation Board?

MR. TYLER: We do not necessarily adopt those figures, but in preparing this table we want to be very conservative.

MR. COMMISSIONER HARDY: Then one other question in which I am very interested: you have taken into account the whole of the western geological structure in your estimate. First, I would just like to have your comment. This is, in your judgment, a most valid approach to the consideration of export rather than taking in a sectional area of the geological structure; that is, taking Alberta?

MR. TYLER: Yes, sir, we certainly feel this is the safest approach.

MR. COMMISSIONER HOWLAND: With your Saskatchewan estimate, for example, you have in your additional reserve figures something for Saskatchewan. You visualize that Saskatchewan reserves will come into this picture in some way?

MR. TYLER: Yes, sir, we do.

MR. FRAWLEY: Mr. Chairman, I would like to ask Mr. Tyler a question.

Mr. Tyler, do you recall the figure of 300 trillion which appeared in the Canadian Petroleum Association brief?

MR. TYLER: Yes, sir.

MR. FRAWLEY: Prepared by Dr. Hume.

MR. TYLER: Yes, sir.

MR. FRAWLEY: And he was going to break that down as well as he could into Alberta, Saskatchewan and Manitoba. Have you done anything of that sort or could you point me to that breakdown of that 300 trillion or something comparable?

MR. TYLER: No, sir, we do not go into that.

MR. FRAWLEY: You do not do that at all?

MR. TYLER: We use the conservative figures and we did not look into the figure.

MR. FRAWLEY: You did not use anything as large as 300 trillion?

MR. TYLER: No, sir.

MR. FRAWLEY: What figure did you use which would compare with 300 trillion?

MR. TYLER: Our total reserves, 78.6 trillion.

MR. FRAWLEY: Would you direct me to that?

MR. TYLER: It is contained in the total column, 55,040. That is, new discoveries plus the

figure we start with in 1958 of 23,600. You add those two and you come up with the total.

MR. FRAWLEY: And have you added those?

MR. TYLER: 78,600 -- 78.6 trillion. That is the total figure you are speaking of.

MR. FRAWLEY: That is for the whole of the western sedimentary basin?

MR. TYLER: Of Canada.

MR. FRAWLEY: So I will understand, does that compare -- perhaps I should not use the word compare -- or is that your figure which is to be set down against Dr. Hume's 300 trillion?

MR. PATTILLO: I think we should have it clear, that is merely the witness' forecast as to what may be discovered in the next 30 years. You can go on making discoveries after that. There is nothing magic about the 30 years.

MR. TYLER: These are the figures we took from the Conservation Board. We do not necessarily adopt them as being correct figures. We think they are conservative. This figure of 78.6 trillion would compare with the Conservation Board figure of 60 to 80 trillion.

MR. MacKIMMIE: Mr. Chairman, I just want to have this clear on the record: it is not intended in this submission that anything be done on estimates on reserves; it is merely to estimate what the market picture may be and how we feel about these

trends. As the witness has said, on the one side it is a very conservative figure and then, estimating the highest of markets, and I do not think Mr. Tyler is here to be asked any questions on the matter of reserves.

MR. PATTILLO: Mr. Chairman, I have no further questions.

MR. TYLER: Thank you, Mr. Chairman.

MR. PATTILLO: Mr. Chairman, I suggest we now take up the brief of Alberta Gas Trunk Line Company, and I would ask the gentlemen representing that company to come forward.

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Submission of

THE ALBERTA GAS TRUNK LINE COMPANY LIMITED

APPEARANCES:

Mr. W.A. Howard - Counsel

Mr. James Caven Mahaffy, Q.C. - General Manager

MR. PATTILLO: Mr. Chairman, Mr. Howard is appearing as counsel for Alberta Gas Trunk Line Company Limited and they have a written submission which, I suggest, be marked C-26-2.

---EXHIBIT NO. C-26-2: Submission of The Alberta Gas Trunk Line Company Limited.

MR. PATTILLO: I would like to ask Mr. Howard to introduce to the Commission the persons who are appearing with him on behalf of the company, and, at the same time, advising us as to who will be reading the submission.

MR. HOWARD: Mr. Chairman, the submission of the Alberta Gas Trunk Line Company Limited will be made by J.C. Mahaffy, Q.C., General Manager of the company. Mr. Mahaffy will also be available to answer questions after the submission.

THE ACTING CHAIRMAN: You may proceed, Mr. Mahaffy.

MR. MAHAFFY: This is the submission, sir, to the Royal Commission on Energy by the Alberta Gas Trunk Line Limited.

The Alberta Gas Trunk Line Company Limited (hereinafter referred to as "Trunk Line") wishes to explain briefly to this Commission the part now being played by Trunk Line in the gas industry of the Province of Alberta. At this date Trunk Line does not own any gas reserves and does not purchase or sell gas. It is engaged only in the business of transporting gas within the Province of Alberta and therefore the assistance which it can give this Commission is very restricted.

Incorporation: Trunk Line was incorporated by a special Act of the Legislative Assembly of the Province of Alberta, which Act came into force when it received Royal assent on April 8, 1954. A copy of the Act, with amendment thereto, is attached as Schedule I. The legislation was sponsored by the Government of the Province of Alberta and was not introduced in the Assembly as a Private Bill. On the other hand for the reasons hereinafter appearing, Trunk Line is not a Crown Corporation.

The corporation details are unusual and it will be helpful in coming to an understanding of the operations of the Company to briefly consider some of the sections of the incorporating Act;

(a) Capitalization (as covered in Section 5):

The authorized capital stock of the Company consists of 8,000,000 Class "A" common shares of the par value of $5.00 with no voting rights attached to the shares and 2,002 Class "B" common shares of the par value of $5.00 with voting rights attached to the shares.

(b) Class "B" (Voting) Shares are referred to in Sections 6 to 17 inclusive and Section 27, Sub-section 2 - The Class "B" shares are divided into four groups as follows:

1. 200 Class "B" common Group I which may be allotted only to Utility Companies as defined in Section 2(h) of the Act.
2. 50 Class "B" common group II which may be allotted only to Gas Export Companies as defined in Section 2(d) of the Act.
3. 1750 Class "B" common Group III which may be allotted only to Gas Producers or Processors as defined in Section 2(e) and (f) of the Act.
4. 2 Class "B" common Group IV which may be allotted only to Directors appointed by the Lieutenant Governor in Council to the Board of Directors of the Company.

The allotment of Class "B" common shares must be made by the Board of Directors in accordance with the provisions of Section II of the Act and by virtue of Section 8 such shares are non-transferable

except under special circumstances provided for by Section 27, subsection 2. Under Section 9 if the holder of Class "B" common shares loses his qualification, his right to vote the shares is lost and unless a transfer of the shares is approved under Section 27, subsection 2, the shares revert to the Company.

(c) Directors (covered in Sections 17 to 25 inclusive): The Board consists of five elected directors and two appointed directors. Section 18 provides that no person shall be elected or appointed to the Board unless: (a) he is a Canadian citizen domiciled in Alberta and (b) he has been a resident of the Province for at least one year; and further provides that no member of the Government of Alberta and no member of the public service of Alberta shall be appointed to the Board. The Lieutenant Governor in Council appoints two directors to the Board, Class "B" common Group I shareholders elect one director, Class "B" common Group II shareholders elect one director. Class "B" common group III shareholders elect three directors. The powers of the Board are set out in Section 27.

(d) Powers: The powers of the Company are set forth in Section 13 of the Act and the exercise of these powers is restricted to the Province of Alberta by Section 14. Section 15 states that the Company shall not enter into any contract, agreement

or arrangement with a gas export company whereby the gas export company gains or may gain any control over the affairs, functions, operations, management or business of the Company or its trunk lines or pipe lines and any contract that the Company enters into in contravention of the section is void.

Issued Capital: The Company has allotted and issued 925 Class "B" common shares as follows:

Group I -	100 shares	(That is the Utility Company classification)
Group II -	6 shares	(This is the exporters classification)
Group III-	817 shares	(That is the classification of the producers and processors)
Group IV -	2 shares	(These are for the Government appointees to the Board)

All of these shares were issued at a price of $5.00 net to the Company and no commission or discount was allowed on the shares. Schedule II contains a list of the Class "B" common shareholders as at December 31, 1957.

This shows the "B" shareholders broken down into the various groups and it gives the name, address and number of shares held by each shareholder as shown by our stock register.

Coming back, now, to page 4 of the brief:

When the abovementioned allotment of "B" shares was made, and pursuant to the power contained

in Section II, subsection 4 of the Act, the Board of Directors by By-Law required subscribers for Class "B" shares (other than Group IV) to subscribe for and purchase 160 Class "A" common shares with each Class "B" common share at a price of $5.00 each, being the par value of the Class "A" shares, As a result the Company allotted and issued 147,680 Class "A" common shares at $5.00 each. Subsequently a public offering of 2,552,320 Class "A" common shares was made by prospectus dated February 19, 1957. The offering price was $5.25 per share, commission payable was 25¢ a share to net the treasury of the Company $5.00 per share. The offering of these shares was restricted to residents of the Province of Alberta and the issue was heavily oversubscribed.

Interjecting there, Mr. Chairman, if I may: at the time the issue was made it was a requirement that cash be paid with the application to the underwriters and, roughly, the amounts subscribed are $75 million, with the result that something over $60 million had to be refunded to subscribers.

The Company realized the sum of $12,761,600 from the sale of the shares. As at December 31, 1957, there were 54,403 Class "A" shareholders.

Other than as set forth above no shares of the capital stock of the Company have been sold and there are no agreements of any kind outstanding with respect to the sale of additional shares.

The issued capital of the Company as at this date consists of 925 Class "B" common shares and 2,700,000 Class "A" common shares.

Now, directors and officers. Directors: Alexander Graham Bailey, executive, Calgary, Alberta. George Ernest Church, farmer, Balzac, Alberta, which is a small town, Mr. Chairman, just a few miles north of Calgary. Robert John Dinning, executive, Calgary, Alberta. David Carlton Jones, executive, Calgary, Alberta. Nathan Eldon Tanner, executive, Calgary, Alberta. Vernon Taylor, executive, Calgary, Alberta. Bruce Franklin Willson, executive, Calgary, Alberta.

Officers: Robert John Dinning, Chairman of the Board. Vernon Taylor, president. George Ernest Church, vice-president. James Caven Mahaffy, Q.C., general manager. John McDonell Ballachey, secretary-treasurer and assistant general manager.

Messrs. Dinning and Church were appointed to the Board by the Lieutenant Governor in Council. Messrs. Taylor, Jones and Bailey were elected to the Board by the Class "B" Group III shareholders (producers and processors), Mr. Tanner was elected to the Board by the Class "B" Group II shareholders (gas export companies) and Mr. Willson was elected to the Board by the Class "B" Group I shareholders (utility companies).

Mr. Chairman, I might just interject a few remarks concerning the directors. They are all well known to us here but they may not be so well known to others and I would like to give

you a brief thumbnail sketch.

Mr. Bailey, one of the producer directors, is vice-president and general manager of the Bailey-Selburn Oil and Gas Company Limited. Mr. Church, who is one of the Government appointees, is a large farmer near Balzac and also is president of the U.F.A. Co-op, Calgary.

Mr. R.J. Dinning is a Government appointee and is Chairman of the Board of Burns and Company Limited, packers, a director of the Bank of Montreal and several other companies.

Mr. Jones, who is a producer director, is assistant manager of production of the Hudson's Bay Oil and Gas Company Limited of Calgary.

Mr. N.E. Tanner, who is an exporter director, as you probably know, is Chairman of the Board of Trans-Canada Pipe Lines Limited.

Mr. Vernon Taylor, the president of the company and a producer representative, is manager of the western region, producing department, Imperial Oil Limited, and he is also Chairman of the Board of Governors of the Canadian Petroleum Association.

Mr. Willson, the utility director, is vice-president in charge of operations of Canadian Western Gas Company and the Northwestern Utilities Limited and, I believe, is also known to the Commission.

Trans-Canada Agreement: The Oil and Gas

Conservation Board of the Province of Alberta granted a permit to Trans-Canada Pipe Lines Limited (hereinafter called "Trans-Canada") to export stated quantities of gas from the Province of Alberta. It is a condition to such permit that the gas removed by Trans-Canada from Alberta shall be delivered to Trans-Canada through the facilities of Trunk Line.

By contract dated the 29th day of January, 1957, made between Trunk Line and Trans-Canada, Trunk Line agreed to construct its presently proposed gas gathering and transmission pipeline system. A copy of this agreement is attached as Schedule III.

Mr. Chairman, I had not intended to read that document.

MR. PATTILLO: No, there will be no need to, Mr. Mahaffy. We have already had the document before us.

MR. MAHAFFY: Thank you.

A route map of the system will be found following page 23 of the contract. Since the date of the contract changes have been made in the routing and design of the system with the approval of the Minister of Mines and Minerals, and in the construction program. Attached as Schedule IV is a plan showing these revisions.

I think, Mr. Chairman, if you would turn to Schedule IV, just briefly, it is the last page

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in the brief.

The explanatory legend is in the lower left hand corner and the solid line indicates the construction which took place during 1957.

To start over at the right hand side of the map, the Alberta-Saskatchewan border, you will find a solid line, travelling, generally, west for a few miles and then north up near the town of Consort, where that line enters the Provost field. That construction was done during 1957.

Then, starting at the right angle, where the line turns north, you will find the 1958 construction, the main 34-inch line being extended west to a point near the town of Princess, and a fairly lengthy lateral of 144 miles from Princess, in a southwesterly direction, to the Pincher Creek field in southwestern Alberta.

Going back to the Princess junction, the 1958 construction also covers 24 miles of 26-inch pipe in a northerly direction from Princess to the Steveville and Cessford fields.

The 1959 construction, we start at that point at Cessford and, in a northwesterly direction, we go to Nevis, that being the town of Nevis, but there is a field there, as you know, the Nevis field.

There is one slight correction, sir, I would like to make in the schedule. The line I have just mentioned is shown as having a mileage of

92.2 miles, 24-inch. That is the correct mileage from a point near Sunnynook to Nevis, but from Cessford to Sunnynook there is an additional 19.2 miles of 24-inch which should be shown in the schedule.

The 1960 construction, which is the dotted line starting, again, at the Nevis point, you will find 52 miles of 18-inch line, which is part of the 1960 construction from Nevis in a northwesterly direction to the Homeglen-Rimbey field. Then, going back to the main line and the point at Princess, you will find a dotted line again, in a westerly direction, 8 5/8ths and 6 5/8ths small lines to Duchess and Countess.

We have put up on the wall, Mr. Chairman, a map of larger scale and the various construction years shown in colours. I hope your eyes are a little better than mine. I cannot see the difference between the colours too well, even from here.

That map is available, if anyone would like to see it.

MR. PATTILLO: Is that just this morning, Mr. Mahaffy, or is it ---

MR. MAHAFFY: Just this morning.

Now, continuing, Mr. Chairman, on page 6, the last paragraph.

Subject to the terms and conditions of such contract, Trans-Canada has agreed to pay to

Trunk Line the cost of providing such transportation service. The contract provides substantially that the "cost of service" for any period is to be the sum of the following principal items: (i) Trunk Line's reasonable and necessary operating expenses for such period; (ii) commencing at the expiration of the 4 year period after the date when Trans-Canada is obligated to deliver gas to Trunk Line for transportation, depreciation of Trunk Line's gas plant at the rate of 4% per annum and other equipment at agreed rates for such period.

The date referred to there is fixed now and should have been shown, and the 4-year period starts to run from October 1st, 1957.

May I also interject that the depreciation is on a straight line basis, 4 per cent per year.

(iii) income and other taxes for such period; and (iv) a return at an annual rate of 7 1/2% on the depreciated original cost of the assets of Trunk Line used in connection with the transportation of natural gas and on necessary working capital.

The contract provides, however, that during the first 4 years of transportation by Trunk Line the rate to be paid by Trans-Canada to Trunk Line for the transportation of natural gas shall be as set out in the following extract from the contract made between Trunk Line and Trans-Canada:

"Development Period Reduction in Charges

For a period of 4 years after the date when Trans-Canada is obligated to deliver, or cause to be delivered, gas to Trunk Line for transportation, or after the date when Trans-Canada first delivers, or causes to be delivered, gas to Trunk Line for transportation (whichever date first occurs) the cost of service rate hereinabove provided for shall be disregarded and Trans-Canada shall pay Trunk Line 4 cents per m.c.f. of gas transported, provided however, that Trans-Canada shall pay Trunk Line during the said 4 year period, the following minimum amounts regardless of the volumes of gas delivered, or caused to be delivered by Trans-Canada to Trunk Line for transportation during the said period:

(1)	During the first year (by twelve equal monthly payments)	$ 210,480
(2)	During the second year (by twelve equal monthly payments)	2,312,640
(3)	During the third year (by twelve equal monthly payments)	3,326,400
(4)	During the fourth year (by twelve equal monthly payments)	3,621,760"

During the above-mentioned 4 year development period and without making any provision for depreciation on its pipeline system, Trunk Line is

expected to operate at a loss in each of such years. This concession in rates by Trunk Line to Trans-Canada was made as a contribution by Trunk Line towards the establishment of the initial export of Alberta gas to Eastern Canada.

With respect to the cost of service rate above-mentioned it should be noted that paragraph 27 of the agreement between Trunk Line and Trans-Canada provides that this agreement is made subject to the provisions of section 30 of The Alberta Gas Trunk Line Company Limited Act, being Chapter 37 of the Statutes of Alberta 1954 and Amendments thereto. Section 30 of the Act provides that the Directors of Trunk Line shall fix the just and reasonable rates, tolls and other charges for the gathering, transporting, distributing, handling and delivery of all gas carried by the company's pipe lines and other facilities or any part or parts thereof. It also provides in subsection 2 as follows:

"Upon the application of the company --"

That, I may interject, sir, is Trunk Line.

"-- or any interested party or by direction
"of the Lieutenant Governor in Council, the
"Board of Public Utility Commissioners may
"vary or fix the rates so fixed by the company
"whether or not the company has been declared
"to be a common carrier by the Petroleum

"and Natural Gas Conservation Board and "the provisions of The Public Utilities Act, "with whatever changes are necessary, apply "to such application or direction."

As at February 14, 1957, Trunk Line's engineers, Dutton-Williams-Mannix, estimated that the cost of constructing the system described in the Trans-Canada contract would be $54,220,000.00, including an allowance of $3,351,000 for contingencies and the sum of $226,000 for working capital. As at January 10, 1958, the engineers have revised their total cost estimates to $54,972,162.00 and that sum is broken down into stages of construction as follows:

For Stage 1, 1957 construction	$11,124,561.00
For Stage 2, 1958 construction	27,654,281.00
For Stage 3, 1959 construction	11,855,335.00
For Stage 4, 1960 construction	4,337,985.00

Mr. Chairman, I would like to interject a comment that may prevent misunderstanding. The Trans-Canada contract, as Schedule A, has a route map of the proposed trunk line system that appears following the last and twenty-third page of the contract. That route map, Mr. Chairman, is not quite the same as the route map I was just referring to, which is Schedule 4 to our brief. The reason it is not the same, some changes were made in our 1958 construction program, and the routing of that portion

of the line is not as you find it in Schedule A of the Trans-Canada agreement.

The changes are not serious or particularly noticeable, but I point that out at this time, first to draw it to your attention and, secondly, to say that the estimated 1958 construction costs referred to on page 9 are the estimated costs of constructing the revised facilities as we now have them.

Financing: The Directors of the Company concluded that the construction above described should be financed as to approximately 25% of the cost thereof by equity funds derived from the sale of the Company shares and as to approximately 75% thereof by borrowings secured by the bonds or debentures of the Company. The sum of $13,500,000 was realized by the sale of shares in the manner above described. No bond or debenture issue has yet been made but it is anticipated that the additional funds required for construction work to be done in the year 1958 will be secured by a first mortgage bond issue to be arranged in the very near future. In this connection the Honourable Ernest C. Manning, Premier of the Province of Alberta, wrote two letters which were published in Trunk Line's prospectus dated February 19, 1957, which letters were as follows.

Again, Mr. Commission Counsel, do you think

I should read these or just refer to them?

MR. PATTILLO: I do not think there is any necessity of reading that, Mr. Mahaffy.

MR. MAHAFFY: The letters, Mr. Chairman, one is addressed to the Trunk Line and the other is addressed to Trans-Canada, and the gist of them is that the Province of Alberta undertook to purchase or underwrite bonds of Alberta Trunk Line in the sum of $26,500,000 and those commitments are still in full force.

OFFICE OF THE PREMIER

ALBERTA

Edmonton
January 31st, 1957

Alberta Gas Trunk Line Co. Ltd.,
2nd Floor, 320 - 9th Avenue W.,
Calgary, Alberta.

Dear Sirs:

I attach hereto for your information copy of a letter written to Trans-Canada Pipe Lines Limited which indicates an undertaking by the Government to purchase certain First Mortgage Bonds of your Corporation under certain conditions.

I am pleased to advise you that early in the next Session of the Legislative Assembly of the Province of Alberta which will meet on February 14th, 1957, the Government of Alberta will introduce and support a Bill which will contain a provision authorizing the Lieutenant Governor in Council to approve

for investment by the Treasury Board under section 30 of The Treasury Department Act the debentures or securities of any corporation incorporated under the laws of Alberta, and carrying on business in Alberta that has a capitalized, fixed, paid-up and permanent stock amounting to at least $500,000.00 and that supplies any service or product within Alberta. This Bill will authorize the Government to underwrite and purchase bonds of The Alberta Gas Trunk Line Company Limited.

The Government of Alberta will undertake and agree to underwrite or purchase at par 5 1/2% First Mortgage Bonds of The Alberta Gas Trunk Line Company Limited in the aggregate principal amount of $26,500,000.00, subject to arrangements having been made for the underwriting and sale to the public of common shares of The Alberta Gas Trunk Line Company Limited in an amount and at prices which will provide that Company with a gross amount before deduction of financing costs of approximately $13,500,000.00.

The funds to be provided through the Government's underwriting or purchase of 5 1/2% Bonds of The Alberta Gas Trunk Line Company Limited will be made available in such amounts and at such times as may be necessary to meet the requirements of the construction program of the Trunk Line Company.

It is further understood that the Treasury Board of the Government in its discretion is to be afforded the first right of purchase of the said Bonds up to the aggregate of $26,500,000.00 and that any Bonds not so purchased or taken up by the Government may then be offered for sale through brokerage houses or in any other manner that the Company may be authorized to do.

Yours very truly,

(signed) ERNEST C. MANNING, Premier.

OFFICE OF THE PREMIER

ALBERTA

Edmonton
January 30th, 1957.

Trans-Canada Pipe Lines Limited,
160 Bloor Street East,
Toronto, Ontario.

Dear Sirs:

I understand that you have substantially completed your arrangements for the financing of the construction of your natural gas pipeline system from the Province of Alberta to the City of Montreal, with the exception of the portion of the line which will be constructed by Northern Ontario Pipe Line Crown Corporation.

I also understand that one of the conditions of the purchase of your First Mortgage Bonds

by institutional investors is that assurance shall have been given that The Alberta Gas Trunk Line Company Limited will be able to obtain the funds required for the construction of the gathering system for the transportation of gas from the producing wells to the western terminus of the pipe line of your Company.

I am pleased to advise you that early in the next session of the Legislative Assembly of the Province of Alberta which will meet on February 14th, 1957, the Government of Alberta will introduce and support a Bill which will contain a provision authorizing the Lieutenant Governor in Council to approve for investment by the Treasury Board under section 30 of The Treasury Department Act the debentures or securities of any corporation incorporated under the laws of Alberta and carrying on business in Alberta that has a capitalized, fixed, paid-up and permanent stock amounting to at least $500,000.00 and that supplies any service or product within Alberta. This Bill will authorize the Government to underwrite and purchase bonds of The Alberta Gas Trunk Line Company Limited.

As soon as such legislation has been passed, the Government of Alberta through its Treasury Board will undertake and agree to underwrite or purchase at par 5 1/2% First Mortgage Bonds of The Alberta Gas Trunk Line Company Limited in the

aggregate principal amount of $26,500,000.00, subject to arrangements having been made for the underwriting and sale to the public of common shares of The Alberta Gas Trunk Line Company Limited in an amount and at prices which will provide that Company with a gross amount before deduction of financing costs of approximately $13,500,000.00.

The funds to be provided through the Government's underwriting or purchase of Bonds of The Alberta Gas Trunk Line Company Limited will be made available in such amounts and at such times as may be necessary to meet the requirements of the construction program of the Trunk Line Company.

The Government has advised The Alberta Gas Trunk Line Company Limited and attached hereto is a copy of a letter written to the said Company to this effect.

You are at liberty to make such use of this letter in connection with your financing arrangements as you may see fit.

Yours very truly,

(signed) ERNEST C. MANNING, Premier.

Construction: During the year 1957 the Company constructed approximately 18 miles of 34" transmission line from the connection point with the Trans-Canada system near the Saskatchewan-

Alberta boundary in a westerly direction to the point of connection with the Bindloss-Provost lateral and it also constructed the Bindloss-Provost lateral which is an 18" line approximately 100 miles in length.

During 1958 the following pipe line construction will be done:

- The main 34" line will be extended westerly about 55 miles.
- The 24" lateral from the main line to the Pincher Creek Field, a distance of approximately 145 miles.
- The 26" lateral from the main line to the Cessford field, a distance of about 24 miles.
- The 6 5/8" lateral from the Bindloss-Provost lateral to the Sibbald field, a distance of approximately 11 miles.

In addition, small laterals will be built to take delivery of gas from the Atlee-Buffalo, Princess and Steveville fields.

1957 Operations: The gas lines and facilities constructed in 1957 were put into operation and Trunk Line commenced transportation of gas for Trans-Canada (other than testing gas) on October 1, 1957.

The Future: Trunk Line's contract with Trans-Canada calls for the construction in 1959 of

the extended north lateral from Cessford in a northwesterly direction to the Nevis area and during 1960 for the construction of the balance of the pipeline system described in the contract and shown on the route map in Schedule IV. The routing and design of the lines to be built in 1959 and 1960 might be changed by agreement between the parties with the approval of the Minister of Mines and Minerals, if changes seem to be desirable in the light of conditions as they exist prior to the time of construction.

If Trans-Canada is granted an export permit to export additional quantities of gas from the Province of Alberta it may be necessary for Trunk Line to construct additional facilities for that purpose. If persons or corporations other than Trans-Canada are granted permits to export gas from the Province of Alberta it is anticipated that Trunk Line will construct the transmission facilities within the Province of Alberta necessary to transport the gas to be exported. In all its planning for future construction Trunk Line will make every effort to avoid any unnecessary duplication of transportation facilities within the Province of Alberta and will also do everything in its power to so construct its pipelines that adequate interchange facilities will be available for the benefit of export lines and gas distribution companies serving Alberta markets.

Mr. Chairman, I would like to interject further, before I say that I have finished reading the brief.

In connection with that last paragraph, we have had conversations, negotiations with two companies, both of whom have given evidence before your Commission, sir, namely, Westcoast Transmission Company Limited and Alberta and Southern Gas Company Limited. In each case we have written letters which, for want of a better term, were letters of intent to each of those companies. We have had those transcribed because we thought they might be of interest to you, and I would like Mr. Pattillo to submit these. I do not know if they should be put in as separate exhibits.

MR. PATTILLO: Yes, I think they should be marked C-26-2-A and C-26-2-B.

MR. MAHAFFY: The letter of July 31, 1957---

MR. HOWARD: There are two the same date to Westcoast.

MR. PATTILLO: One is addressed to Westcoast and the other is addressed to Mr. Hetherington, in his capacity as executive vice-president, and I would like to have those marked "A" and "B", and the letter of November 29, 1957 addressed to Alberta and Southern Gas Company marked as "C".

---EXHIBIT NO. C-26-2-A: Letter dated July 31, 1957 from Alberta Gas Trunk Line Company Limited to Westcoast Transmission Company Limited.

---EXHIBIT NO. C-26-2-B: Letter dated July 31, 1957 from Alberta Gas Trunk Line Company Limited to Mr. Charles R. Hetherington, Westcoast Transmission Company Limited.

---EXHIBIT NO. C-26-2-C: Letter dated November 29, 1957 from Alberta Gas Trunk Line Company Limited to Alberta and Southern Gas Company Limited.

THE ACTING CHAIRMAN: Will you just summarize these letters in about ten words, please?

MR. MAHAFFY: Mr. Chairman, if you do not mind I think the quickest way to get them is for me to read them rather than attempt to summarize them. The f

The first letter addressed to Westcoast Transmission Company Limited is dated July 31, 1957. I can skip the first paragraph. We did give them an estimated cost of a certain pipeline facility and in paragraph 2 we gave them estimated operating costs of that pipeline system. The third paragraph reads:

"We wish to emphasize that the above "figures are estimates only, based on preliminary "information, and are subject to revision after "more detailed studies of the routes have been "made. Furthermore, Trunk Line must reserve "the right to subsequently suggest different "routes and revised facilities as may seem de- "sirable to serve not only your requirements "but also the requirements, actually or reason- "ably anticipated, of local and export markets."

Now, sir, if we may jump to Exhibit C, the letter to Alberta and Southern Gas Company Limited, dated November 29, 1957:

"With respect to your recently filed "application to the Oil and Gas Conservation

"Board for a permit to remove natural gas from "the Province of Alberta, we have not made a "detailed review of the design, capital cost "estimates and operating cost estimates set forth "therein for the gas transmission facilities within "Alberta but we are prepared to accept your "engineers' design and cost estimates for the "purpose of this application.

"If the Conservation Board grants "your permit, Trunk Line will, as soon thereafter "as necessary to meet the requirements of any "governmental body having jurisdiction over any "portion of your project, diligently prosecute "an application under The Pipe Line Act for a "permit to construct the necessary gas trans- "mission facilities in Alberta. We reserve the "right, however, to request in this application "the adoption of such revised routes and facilities "as may seem desirable at that time to serve not "only your requirements but also the requirements, "actual or reasonably anticipated, of local and "other export markets.

"If the said permit is granted to Trunk "Line, we will forthwith enter into an appropriate "gas transportation contract with you on terms "and conditions to be mutually agreed upon.

"We hereby consent to your use of this "letter as an exhibit supporting your application

"before the Conservation Board."

I think, having read as much as I have from the exhibits, sir, that it would be sufficient to give you the gist of those documents. That is our submission, Mr. Chairman.

THE ACTING CHAIRMAN: Mr. Mahaffy, this is more for my personal information: why are so few people going to be allowed to vote on these shares? Is there a special reason there?

MR. MAHAFFY: The reason behind that, sir, apparently is, and of course I hesitate to interpret a statute or the legislature's intention, but the effect, I will say this, is to control the voting shares of the company and to make sure that that control is within the four groups of the B shares in the election of directors. The fear, I am sure, there is that if the Class A sharers were granted voting rights just like any other corporation the voting control might end up in Timbuctoo or some other place.

THE ACTING CHAIRMAN: The Class A are putting up the money, the B sharers are putting up $10,000 from the $30 million?

MR. MAHAFFY: That is right, sir, roughly those figures.

THE ACTING CHAIRMAN: On page 7, that $210,000 from Trans-Canada, is that starting last year, October, 1957?

MR. MAHAFFY: Yes, Mr. Chairman, that first year mentioned there started October 1, 1957.

THE ACTING CHAIRMAN: And presently only Trans-Canada has a contract, they are the only buyer?

MR. MAHAFFY: That is right, sir.

THE ACTING CHAIRMAN: Mr. Patterson.

BY MR. PATTERSON:

Q. Mr. Mahaffy, I take it from the statement on the third or fourth line of the first page that to date powers given to Alberta Gas Trunk Line by Section 13 of its Act have not, by and large, been exercised other than to go into the transporting business so far as gas is concerned?

MR. MAHAFFY: That is a pretty wide question, Mr. Patterson. May I look at Section 13 and see what we have exercised or can you specify what you are interested in?

Q. In the first place, Section 13(a) "a company may act as a common carrier of gas". Is it now a common carrier of gas?

MR. MAHAFFY: I think you will appreciate that is perhaps a difficult question to answer. We have not been declared a common carrier under the Oil and Gas Conservation Act but whether we are in fact a common carrier, it seems to me that is a legal question that I would not want to answer. Perhaps I can give you what you want to know by

saying this, that to date we have never turned down anybody that wanted us to transport gas.

Q. Let me put it to you this way: are you not at the moment limited so far as the common carrier aspect is concerned in that a producer in the field who may have a market, let us say, 200 miles down your line by private arrangement with a small town is not yet -- perhaps this is not arising, but is he in a position to go to you and say, "I have gas at point A and I have a market at point B within the Province of Alberta", and deliver to you at point A and supply his own take-off at point B?

MR. MAHAFFY: We will be very glad to see that gentleman at any time.

Q. That has not arisen?

MR. MAHAFFY: No, that has not arisen.

Q. But at the moment you would envisage that you would have sufficient capacity to be able to undertake that type of thing, common carrier work?

MR. MAHAFFY: Well, now, I would not say that. It would depend on the quantities he wanted to have transported, but to the extent we have capacity or can arrange with him and with others to increase our capacity to take care of his requirements we certainly anticipate that we would be available for him and certainly be expecting to hear from the type you mention as we go along.

Q. Now, the next subparagraph is "Act as a common purchaser of gas from any pool in the province". Have you acted under that subsection?

MR. MAHAFFY: No, we have not, Mr. Patterson; we have not purchased any gas.

Q. And could you assist us in advising when it would be thought just in what way that type of duty might be carried out by a pipe line company as a common purchaser?

MR. MAHAFFY: I should point out, we have the power under 13(b) to act as a purchaser of gas. We have not yet had occasion to exercise that power and there is nothing that we know of on the horizon that would cause us to be actively thinking about that phase of our powers. It is something that has been discussed informally in directors' meetings and at the time of the organization of the company and so on but there is nothing, no definite policy established, and nothing, as I say, within view where we expect to act as a common purchaser of gas.

Q. Let me put it to you perhaps another way: in reviewing pipe lines and pipe line companies it would be of assistance to the Commission to know what sort of circumstances you would feel would give rise to your acting as a common purchaser and what value in transmission of gas

the power to act as a common purchaser has?

MR. MAHAFFY: I do not think I can be too helpful on that question. It is hard to visualize just what way this power of purchase might arise. One can visualize, probably, or imagine circumstances where it would be advantageous for all gas within the province going into the trunk line system be purchased by the Trunk Line and resold to exporters and local utility companies, and so on. We have not, as I said a moment ago, really thought seriously about that at all. There might be other cases where for some reason or other, as a conservation measure, the Conservation Board might order us to buy and pick up gas from some particular field. In that case we would certainly have some place, we would have to have some place to put it at the other end, some customer to take it so that the whole feature of gas purchasing with us is rather nebulous at this stage.

Q. Subsection (c), I take it that is what you are doing now, that is constructing pipe lines and transmission facilities?

MR. MAHAFFY: That is right.

Q. Paragraph (b), "Develop, purchase, lease or otherwise acquire, operate or maintain and control gas storage fields and the necessary facilities for their operation". I suggest that in that connection that will be done in conjunction

with and as assistance to local utility companies, is that correct?

MR. MAHAFFY: That could be so, that might be necessary in connection with the operation of the power set out in (b), common purchaser. Again may I say we have done nothing to exercise the power under (d).

Q. And under (e), that in part you are doing but of course to the extent it talks about gas storage fields you are not?

MR. MAHAFFY: That is right.

Q. And (f), "Purchase", you are not purchasing gas presently?

MR. MAHAFFY: No, we are not.

Q. Are you processing it?

MR. MAHAFFY: No, we are not.

Q. You are transmitting, transporting, distributing it but not selling?

MR. MAHAFFY: That is right, purely transportation.

Q. Then, as to (g) those faciliities there are part of the operating of the transportation system and I assume you are setting those up as it becomes necessary?

MR. MAHAFFY: Well, we are exercising that power in a way but we did not actually construct our own communication system, rather we arranged that by leasing arrangement with Trans-Canada telephones

and are making use of their facilities in that connection.

Q. Then you have the power to purify, scrub or otherwise treat for the removal therefrom of hydrogen sulphide, and again I take it you are not doing that as yet?

MR. MAHAFFY: That is right, and I hope we are not going to go through all the items covered by (i).

Q. No, perhaps you would be able to do it from memory but I cannot. In connection with the matter of processing, I take it that so far in your development you have left the question of removing the good petroleum gas and sulphur from gas supplied to you up to the producers? You have not as yet considered whether you should or should not go into that kind of business?

MR. MAHAFFY: That is right. Trans-Canada, if you will look at their contract, deliver to us pipeline gas at certain field collection points and that gas is then transported and my understanding is that in all of those fields the purchasers themselves have done whatever processing is necessary to make the gas suitable for pipeline transportation at the pressures required by Trans-Canada contracts.

Q. Now, turning to allotment of Class B common shares which must be made in accordance with the provisions of Section 11 of the Act, so far as

gas producers and gas processors are concerned the result would appear to be that major oil companies receive a higher allotment of shares than the minor oil companies, is that correct?

MR. MAHAFFY: That is not a necessary result, Mr. Patterson. It probably has worked that way but it is possible in the interpretation of Section 11, which we might call the minor company because of its gas reserves and acreage holdings, could very conceivably receive more shares than the major company.

Q. Well, how are the factors set out in paragraph 11(c) weighted? It says that the Board shall have regard to the amount of capital investment, the quantity of Alberta gas that the producer is capable of producing, the gas reserves of the producers, the total acreage and the amount of development work done. Now, is there some formula to say which is the most important and how many shares you get per dollar or acre or what?

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MR. MAHAFFY: Well, there was a formula worked out based on what you have just read. It was approved by the directors. I am sorry, but this was back in 1954, and I am quite unable to explain the details of it to you, but, certainly, at the time it was a formula which seemed fair. A lot of thought was put into it, and the allotment of the B shares to the producers and processors was made on that basis. I am sorry I cannot give you the details, but perhaps I can add this, that we have never had any complaint that I know of from any producer or processor that the distribution was not made fairly and in accordance with the provisions of the Act.

Q. However -- and I am not wishing to engage in comment on it -- but the fact would appear to be, for example, that a major shareholder in that group is Canadian Gulf Oil Company, 98, and Imperial Oil is 98 -- on a quick look through those appear to be the two biggest ones; and Shell is 51. Am I correct in those quick reviews?

MR. MAHAFFY: I am sorry, I didn't realize you were asking me a question.

Q. I say, it is correct to say that as a result of the formula Canadian Gulf Oil Company received 98 shares, Imperial Oil received 98 and Shell Oil received 51, and those appear to be, with the exception of Canadian Delhi at 62, the biggest single allotments of shares?

MR. MAHAFFY: If you are reading -- and I think you are -- from the schedule or brief, then those figures are certainly correct.

Q. In working out a method for assessing transportation costs to Trans-Canada Pipe Lines, I note that in the first four years the charge is at 4 cents per Mcf: can you tell us something of the background of that? What I am interested in is the reasoning behind a single charge for gas delivered at the Saskatchewan gate no matter what distance it has travelled, and why it is that a zoning system was not set up in making your pipeline charges?

MR. MAHAFFY: Well, I suppose that is an old story, and I am afraid it will go on for all time -- whether or not we should have a zoning scheme or an over-all scheme. That was given a lot of consideration by Trunk Line, and I am sure also Trans-Canada, and I have no doubt also by the producers who were involved. It was decided that under all the circumstances an over-all system rate was preferable in this case. Zones were discussed, but you get into the old argument, and the chap on the Saskatchewan border says, "It should not cost as much to take my gas to the Saskatchewan gate as it does to transport gas from Pincher Creek". The Pincher Creek fellow says, "If it was not for my gas you would not have any gas to put anywhere;

there wouldn't be any pipe line." There are all types of factors involved, and it was thought in this case that the over-all rate was the one to adopt.

Q. Well, what I am interested in is a review by you of the types of factors. Again, I point out to you that a problem the Commission is faced with and interested in is the question of pipe line rates, and I think you can assist by giving us the kinds of factor that must be considered in coming to this rate and this method of deciding on -- I suppose this is what you might call a rolled-in rate, is it?

MR. MAHAFFY: Mind you, for the first 4-year period, I don't know what you would call it. It is a certain rate per Mcf with a minimum guarantee.

Q. Yes.

MR. MAHAFFY: After the four years it is something altogether different. It is not worked on a per Mcf charge at all. Theoretically, Trunk Line could not care whether Trans-Canada put through a million cubic feet a day or one hundred million cubic feet a day; we would still receive the same amount of money for the transportation from Trans-Canada, because we are on a cost of service rate; the cost of service has to be paid regardless of the throughput.

THE ACTING CHAIRMAN: We will have a break now.

---A short recess.

THE ACTING CHAIRMAN: Mr. Patterson, the Commissioners will have a few questions when you are through.

MR. PATTERSON: Thank you, Mr. Chairman.

Q. Mr. Mahaffy, you have just outlined in the future, under the contract with Trans-Canada, the remuneration to Alberta Gas Trunk will be on a cost of service basis: is it the thinking of Alberta Gas Trunk that a similar method of charging will be used in the event of either or both Westcoast's and Alberta and Southern's applications for export being granted, and Alberta Gas Trunk supplying to them a similar service to that which they now give Trans-Canada?

MR. MAHAFFY: Mr. Patterson, that is certainly one of the types of transportation rate that could be set up. I would not say that Alberta Trunk is, shall I say, married to the cost of service rate. I think each case must depend on its own circumstances, and to some extent on the wishes of the parties themselves. I know the two companies you have mentioned, in preliminary discussions with us have suggested that we operate on a cost of service rate. We have not as at this

time agreed that should be so, but it could very well be so.

Q. I am not asking you to commit your company to those people, but what other methods could be used?

MR. MAHAFFY: It would be quite possible to work out a rate on a per Mcf basis. We might say to you, for example, that we will transport your gas from Edmonton to Calgary on a flat rate of 3 cents a thousand. That would be the sum total of our arrangement: we would transport the gas and the rate is 3 cents, based, naturally, on certain guaranteed load factors and all that sort of thing, and probably with certain minimum take-or-pay requirements.

Q. And is there another method that might be considered

MR. MAHAFFY: I think those are the two principal methods -- certainly the two with which I am familiar, and, possibly, shall I say, variations of them.

Q. You mentioned that as assistance toward establishing an initial export of Alberta gas to Eastern Canada, during the first four years of this development period, Alberta Gas Trunk is expected to operate at a loss: have you reviewed at all the extent to which this loss period might be reduced in the event of Trans-Canada's market

survey and outline of further requirements as given here were to be carried forward?

MR. MAHAFFY: Mr. Patterson, if the Trans-Canada throughputs exceed the minimums which they have guaranteed under the contract during that 4-year period -- exceed those minimums -- then, to the extent they exceed them, our position would be improved. Trans-Canada filed with this Commission, two or three days ago, a revised market estimate but, unfortunately, we did not see those figures before they were submitted to this Commission, and we have not had time to relate that report to our contract with them to see just how it may affect us. However, definitely, to the extent that they exceed the minimum throughputs, our loss is reduced. Whether we will get out of the red and into the black, of course, is another thing.

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Q. Now, if I correctly understand the division of shares into four groups, one of those groups consists of utility companies, which is restricted to Alberta utility companies, and another consists of gas export companies. Does some problem not arise by reason of the fact should Alberta and Southern become an exporting company, two of the utility companies have interests in that exporting company and, therefore, do not quite fall within the classifications as set out in your method of allotting shares? Do you think that that has any effect on the decision of a utility company on holding shares in Alberta Gas Trunk if the utility is concerned also with export?

MR. MAHAFFY: It could; it could be.

Q. Is it fair to say this: the idea of the division was to insure that these companies which are solely concerned with producing in Alberta -- or let me put it this way: those companies that are producing in Alberta have an opportunity to have a voice in Trunk Line's affairs, and those who are supplying gas to Alberta have a definite interest and want to watch what is being taken out of Alberta and want to be in a position to take advantage of the facilities for interchange that you mention, that are offered to them by your pipeline and, for that reason, utility companies operating in Alberta were given a voice in the affairs of the

Alberta Gas Trunk Line?

MR. MAHAFFY: Utility companies, as you know, are entitled to elect one director of the seven, and I think I would agree with you that that gives them a seat on the Board and a chance to make their voice felt in the company affairs.

BY MR. PATTILLO:

Q. Mr. Mahaffy, is there any relationship between the number of Class "A" shares issued and the Class "B" shares issued?

MR. MAHAFFY: On the original issue there was a relationship, but not in any subsequent issue.

Q. Where you speak of contemplating a 75 per cent equity and 25 per cent, is it contemplated that that relationship will be continued if further facilities are required and greater expenditures may then be contemplated?

MR. MAHAFFY: The 75/25 division, I should say, was considered by the directors about a year ago to be, approximately, a correct division. That might be 20/80 or 15/85. I think, in the interests of our shareholders -- of course, this depends on a lot of factors, too -- but by and large in the interests of our shareholders, I think the directors would seek to have the percentage of senior money as high as possible and still be able to finance.

Q. Therefore, if it was necessary for the

company to build additional facilities, other than those shown on the plan, for the purpose of transmitting the gas of Alberta Southern and Westcoast Transmission, you would contemplate there would not necessarily be the same ratio maintained between shares and bonded indebtedness as presently exists?

MR. MAHAFFY: I say it would not necessarily be that same ratio, yes.

Q. And there is not any policy established by the directors that the number of Class "A" shares should be kept in certain ratio to the number of Class "B" shares outstanding from time to time?

MR. MAHAFFY: No, sir.

Q. Are there any provisions that differentiate between the rights of Class "A" and Class "B" shares as to dividends?

MR. MAHAFFY: No, there are not. I think you are right in saying the only difference between the shares is that "B" shares have voting rights and "A" shares do not. Otherwise, as far as I know, they are on an equal basis as to dividends or distribution.

Q. So, if a dividend was declared in the Class "A" shares, then the Class "B" shareholders would rank equally and each obtain the same dividend?

MR. MAHAFFY: Per share.

Q. Per share. So, if you do not change this ratio, it may be that as the company becomes profitable the producers and utilities are going to have a very good investment with very little expenditure of money?

MR. MAHAFFY: I do not quite understand that question, Mr. Pattillo. Assuming the utility owns 5 "B" shares and the dividend is 10¢ a share, their dividend will amount to 50¢. That is why I was wondering if we were talking at cross-purposes when you mentioned a dividend shared equally. I would like to make that clear: there is not a 50 per cent dividend going to "A" shares and 50 per cent to "B". If a dividend of 10¢ a share is declared, that is what a shareholder gets per share, whether it is "B" or "A".

THE ACTING CHAIRMAN: I think Dean Hardy has a few questions to ask.

MR. COMMISSIONER HARDY: Mr. Chairman, I am a little bit confused as to just who makes the basic decisions on the operations of the company. I realize the Board of Directors has the power under the Act, but we were told a few days ago, in connection with the submission from one of the companies seeking an export permit, that Alberta Trunk told them they would like to put in the distribution for the facilities to transport the gas to the border, and this witness said,"on that

basis we accepted it."

As an example, what would have happened if the company had said, "No, we do not want Alberta Trunk to put in that line; we want to put it in ourselves."

MR. MAHAFFY: If that happened, Mr. Commissioner, we would then appear before the Oil and Gas Conservation Board on the application of that company for an export permit, and we would ask the Conservation Board to insert in that permit a condition similar to the one which appears in the Trans-Canada permit, namely, that they can only export the gas through Alberta if they take it through the facilities in Alberta of the Alberta Gas Trunk Line.

MR. COMMISSIONER HARDY: So then it is a fact whether or not Alberta Trunk has a monopoly in the collection field in Alberta depends upon the decisions of the Conservation Board and not on the decision of your Board of Directors?

MR. MAHAFFY: That is right. We have no monopoly, but we would ask the Board, under the circumstances you outline, to make that a condition of the permit, and it would be then for that Board to say whether that should be so or not.

MR. COMMISSIONER HARDY: But the Conservation Board has the complete power of deciding whether you are a monopoly or whether you are not,

[illegible]

and to what extent you may be a monopoly in a decision such as you are just describing?

MR. MAHAFFY: Frankly, I do not like the word "monopoly" because this is something that could change as the years go by. If in every case the Conservation Board made a condition of the type we are discussing, then I suppose you could say we would have a monopoly on the gathering of gas for export purposes, yes. But, I do not think, and certainly we as a company cannot assume the Conservation Board is going to do that.

MR. COMMISSIONER HARDY: Well, supposing now we come to your powers under Section 13 of the Act and consider the sulphur business. Would the decision as to whether or not you went into the sulphur business depend, again, upon a ruling of the Conservation Board, or would it be entirely a ruling by your own Board of Directors, or might it be either way?

MR. MAHAFFY: It could be either way or a combination of both, I would think.

MR. COMMISSIONER HARDY: In other words, you might look at it as the circumstances arose and you would decide whether you wanted to go into the sulphur business or not, and if other people wanted to go in, you would ask for the assistance of the Conservation Board that you go into the business rather than someone else?

MR. MAHAFFY: Yes; just to use an imaginative example, supposing in some particular field, perhaps with a considerably divided ownership, the producers thought it might be convenient and economical to ask Trunk Line to construct a sulphur plant or other type of gas processing plant, and thereafter to transport the pipeline gas to market. That is conceivable. It could be arranged by contract between those producers and the Trunk Line.

MR. COMMISSIONER HARDY: Then supposing we assume these conditions: that there is not sufficient market for the sulphur to use it all up, and yet the gas has to be processed. Could the Conservation Board, by regulation, require Alberta Trunk Line to process the gas and do anything they like with it, which might mean stockpiling it?

MR. MAHAFFY: I am sorry, I do not know just how to answer that one.

MR. COMMISSIONER HARDY: That is all, Mr. Chairman.

THE ACTING CHAIRMAN: Dr. Howland has some questions.

MR. COMMISSIONER HOWLAND: I have two questions: our counsel was asking you a question a moment ago regarding the dividends. I was trying to think through this question a little as the question was thrown to you. Are the interests

of Class "B" group the same in declaring a dividend as the other groups?

MR. MAHAFFY: I suppose it is a question of quantum; a man who is only going to get 10¢ has not as much interest as a man who is going to get $100.

MR. COMMISSIONER HOWLAND: No, that is not the question. I may have a wrong understanding of the set-up of the organization as to Group "B" being concerned with the operation of the industry in itself; the price structure of their whole operation is affected by it. As I see this group here, their interest could be, under some certain circumstances, to withhold a dividend, whereas the other group might be more interested in the dividend. Have I got this wrong?

MR. MAHAFFY: No, I think you have a point there, Mr. Commissioner, but I think one has to keep in mind the constitution of the Board of Directors because the Board of Directors in this company is all-powerful, as we say, and there is diversification in that Board. There we have three producing and processing members; two of the members are exporters, utility companies, and we have two who, you might say, represent John Q. Public as well as, specifically, the shareholders. Now I think in that diversification -- we have a problem, granted, because they represent different

viewpoints; but, also, we have strength because of the diversification of the interests they represent.

MR. COMMISSIONER HOWLAND: Yes, I was looking over the qualifications you gave me of the Board. However, this is something we do not need to pursue.

What I would like, if you could give it to me, Mr. Mahaffy, was some background of the economic problems which led to the legislation. I would understand, I think, the legislation much more if I understood what the economic problems were which led to the legislation.

MR. MAHAFFY: Sir, you will agree that I cannot give evidence of the intention of the Legislature, when they passed this Act. That is not for me to say; but I think one of the principal objectives, certainly, that our Board of Directors constantly keeps in mind is the elimination of waste caused by unnecessary duplication of pipeline services within the province.

Now, it is awfully hard to look down the road and try and guess where these pipelines should go but, nevertheless, to the extent that it is, shall I say, humanly possible, an effort is being made to so construct these facilities that these expensive duplications of lines will be avoided.

I think another point which is very prominent is that -- a selfish viewpoint, if you want to call it that -- that we who live in Alberta think that a system as envisaged by this legislation

can be of very great help down the years to local utilities, gas utilities, through an interchange system of helping them to meet their supply requirements.

The third, in the broader outlook, we are interested particularly, as the years go by, in the export of gas, whether it be to other parts of Canada or elsewhere, and, again, it is very much in the interests of the producers that the movement of that gas be made as economically as possible within the Alberta boundaries, anyway. We cannot say what happens after that. I think it was felt that export of gas and the resultant prices to producers could be helped by the setting up of a system of this type.

MR. COMMISSIONER HOWLAND: You would call this a wise anticipation of potential problems rather than dealing with problems which had already arisen?

MR. MAHAFFY: Right.

MR. COMMISSIONER HOWLAND: Thank you.

MR. COMMISSIONER BRITNELL: I have just one question left, after the answers to the last two Commissioners.

Is it the present expectation of Alberta Trunk Lines to build all the trunk lines necessary for transportation of gas for export from the province, subject, of course, to the sanction or ratification of the Conservation Board?

MR. MAHAFFY: Yes, sir, that is the expectation.

MR. COMMISSIONER LADNER: In connection with the dividends, Mr. Mahaffy, what is the rate now?

MR. MAHAFFY: Mr. Commissioner, there has been no dividend declared and there is no expectation of any dividend for another three or four years.

MR. COMMISSIONER LADNER: But what interested me was this, I think, a simple proposition: the shares are over-subscribed by something in excess of $60 million and it seems to be a combination of a public ownership and a private ownership, and I would presume that the private ownership would have some expectation, some expectancy of dividends.

My question is, has the Board any particular policy on that question?

MR. MAHAFFY: No policy, sir, except to put it this way, perhaps: this Board of Directors does have quite a responsibility. This company is being operated, you might say, on public utility principles; I mean, it is not a get-rich-quick company. The directors certainly are endeavouring to set it up and to operate it on, as I say, a public utility principle and a fair rate of return on money invested and, subject to capital requirements

that might be needed for expansions, enlargements of the system and so on, I am quite sure -- and I speak personally now -- that dividends will be declared and will be probably on a fairly regular basis as soon as it is possible to do it.

MR. COMMISSIONER LADNER: Well, Section 27 gives the Board power to make by-laws in respect of the declaration and payment of dividends to shareholders. Are there any such by-laws?

MR. MAHAFFY: I think what you are asking me, sir, and please correct me if I am wrong: you are asking if there is any by-law declaring or setting a dividend?

MR. COMMISSIONER LADNER: Any by-law in respect of dividends, whether declaring or whatever it may be.

MR. MAHAFFY: Well, there are references in what we call our general No. 1 by-law for procedures to be followed in declaring dividends, but there has been no specific declaration of a dividend.

MR. COMMISSIONER LADNER: And no rate set?

MR. MAHAFFY: No, sir.

THE ACTING CHAIRMAN: Mr. Frawley?

MR. FRAWLEY: I only want to have explained one matter: your capitalization calls for 1,750 Class B common, Group 3 shares, and I have added up the number of Group 3 shareholders and

they come to about 69 or 70. From that I must conclude that only 69, if that is the correct figure, have applied for shares in that group.

MR. MAHAFFY: My recollection is, Mr. Frawley, that no applicant for those particular Group B shares was turned down on the grounds that he was not qualified and, consequently, if there are 69 shareholders there, then those are all that have applied.

I perhaps should point out that the total of those shares issued is 817, and there are 1,750 of them, and you will find a similar situation in the groups 1 and 2. Now, the reason that all of those shares were not allotted and issued is because, without having to apply for an increase in capitalization, we wanted to have the additional B shares in the treasury, so that when new producers qualify and come along and want to purchase shares, or new exporters or new utilities, we still have B shares in the treasury and further issues of those shares can be made.

MR. FRAWLEY: In this Group 3 -- and those are the producers and processors?

MR. MAHAFFY: That is correct.

MR. FRAWLEY: Are there applications coming in from time to time? Is it an active thing?

MR. MAHAFFY: No, it is not.

MR. FRAWLEY: The Group 3 shareholders,

as you have listed them in your brief, are those that had applied and were allotted shares when the company started off?

MR. MAHAFFY: That is correct.

MR. FRAWLEY: And there has been no interest, shall I say, manifested by other producers in applying for shares?

MR. MAHAFFY: That is correct, Mr.Frawley.

MR. FRAWLEY: And I do not know, but I suppose you would know: there are many more than 69 persons, firms or corporations engaged in producing or processing in Alberta?

MR. MAHAFFY: I doubt if there are many others. This is pretty well a "Who's Who" of the oil business, I think.

MR. FRAWLEY: I am glad to have you tell me that, and I will just put one last question this way:

There are no important producers that have stayed out and have not applied for and been allotted shares, and I am thinking, again, of Group 3.

MR. MAHAFFY: I don't think of any.

MR. FRAWLEY: Well, unless you can think of them conveniently, Mr. Mahaffy, I take it that there are none.

MR. MAHAFFY: I have just been reminded that this list of shareholders, it should be kept in

mind, must have a gas qualification. For instance, there might be a company involved -- it is hard to imagine, but there might be a company involved entirely in oil operations, who would not qualify for these B shares.

MR. FRAWLEY: You are not running an oil pipeline business?

MR. MAHAFFY: No.

MR. FRAWLEY: Thank you.

THE ACTING CHAIRMAN: Mr. Mahaffy, on behalf of the Commissioners, I wish to thank you and your colleagues very much for submitting this brief. I am sure, with the strong Board of Directors you have here, the future of this company is very bright. We thank you.

THE ACTING CHAIRMAN: Mr. Pattillo, shall we be going ahead with the B-A Oil?

MR. PATTILLO: Yes, Mr. Chairman, I am going to suggest that we proceed at once with the submission of The British American Oil Company Limited.

Submission of

THE BRITISH AMERICAN OIL COMPANY LIMITED

Appearances:

Mr. W. R. Sinclair	Counsel
Mr. Edward D. Loughney	Senior Vice-President
Mr. Floyd D. Aaring	Zone Production Manager
Mr. James A. Strand	Petroleum Engineering Supervisor
Mr. Sydney J. Anderson	Production Engineering Advisor
Mr. Richard E. Martin	Reservoir Engineer
Mr. Stanley G. Pearson	Manager, Exploration Department
Mr. John S. Wonfor	Chief Sub-surface Geologist
Mr. Nicholas M. Ediger	Senior Staff Geologist
Mr. John R. Yarnell	Manager, Services Department
Mr. E. Eric Hargreaves	Supervisor, Budget and Statistics

MR. PATTILLO: Are you ready, Mr. Sinclair?

MR. SINCLAIR: Yes, sir.

Mr. Chairman, I am Mr. W. R. Sinclair and I am appearing today as counsel for The British American Oil Company Limited. Our submission will be read by Mr. E. D. Loughney, Senior Vice-President of the company.

I have, sir, a list of the various officials

of the company who have been associated in the preparation of our submission, and it might be of assistance to the Commission if you had copies of those names available. I might briefly read their names and their qualifications appearing on the list.

First of all, we have Mr. Loughney, Senior Vice-President; and then, in connection with the engineering aspects of the submission, we have Mr. Floyd D. Aaring, Mr. James A. Strand, Mr. Sydney J. Anderson and Mr. Richard E. Martin.

In connection with the geological aspects of the submission, we have Mr. Stanley G. Pearson, Mr. John S. Wonfor and Mr. Nicholas M. Ediger.

Then, on the economics and statistics aspects of our submission, we have Mr. John R. Yarnell and Mr. E. Eric Hargreaves.

We have, sir, filed with the Commission 25 copies of our submission and perhaps that might be marked as the first exhibit.

MR. PATTILLO: That will be C-26-3.

---EXHIBIT NO. C-26-3: Brief filed on behalf of The British American Oil Company Limited.

MR. SINCLAIR: Sir, our plan is to ask Mr. Loughney to read the brief; but he will, on occasion, ask some of our officials to perhaps read an appendix or to explain a chart. After the

brief submission has been read and should there be any questions, as no doubt there will be, we would suggest that they be directed to Mr. Loughney and he will refer them to members of the group as may seem desirable.

I think now, with the Commission's permission, we might commence with the reading of the brief.

THE ACTING CHAIRMAN: Mr. Loughney, we are listening.

MR. LOUGHNEY: It is a pleasure to appear before this Commission and we welcome the opportunity, Mr. Chairman, to present this brief.

In the following submission our comments will be restricted to matters of fundamental concern to British American as a natural gas producer. At a later date we would welcome the opportunity to present our views on other subjects within the scope of the Commission's inquiry.

Recommended Gas Export Policy: In our opinion the policy that will best serve the national interest, in relation to the export of gas as an energy source, is one permitting the imediate export of quantities determined to be surplus to the foreseeable needs of Canada. The future requirements of Canada should be of paramount importance in determining the quantities of gas available for export.

This recommendation is based on the following conclusions:

1. Canada has, and will continue to have, exportable quantities of gas surplus to her own future requirements. Surplus quantities should be determined by relating future requirements to future reserve trends.

2. A policy permitting the immediate export of available surplus, by providing the necessary incentive for the development of existing reserves and the discovery of new reserves, is the best way of ensuring that adequate reserves will be developed to meet future national requirements.

3. The continued growth of the industry will require heavy capital expenditures in the search for new reserves, in the development of existing reserves, and in the construction of processing plants and related facilities. Markets must be made available to attract the capital required for this growth.

4. The demand for natural gas in Canada, in relation to the reserves presently available and to be discovered, does not provide adequate incentive for continued gas exploration and development. Markets outside Canada are required now to avoid a serious setback to the continued expansion of the industry.

5. The steady growth of the natural gas

industry will have far-reaching beneficial effects on the overall economy of Canada. The development of export markets for gas will assure the continued flow of funds into the economy for further expansion, creating additional employment and materially assisting Canada's balance of trade position.

British American's Position in the Industry: British American is a major holder of gas reserves in Canada, and has been concerned for many years with the problems relating to the production and disposition of natural gas.

To illustrate how essential export markets are to the industry, we feel it would be helpful to the Commission to describe British American's position and to demonstrate the importance of this subject to its operations.

British American has a proven marketable reserve of natural gas of three trillion cubic feet located in fields throughout Western Canada. This reserve represents an investment at December 31, 1957, of $48.6 million in gas wells and properties, gathering systems, processing plants, and related facilities. A further $22 million expenditure is planned for 1958. To date, British American has received $854,000 of net income from this investment. Fifty per cent of this reserve is committed to pipe lines presently under construction or in operation. The remaining reserve is awaiting markets.

While British American has this direct interest in the development of export markets, we also believe it is in the interests of the natural gas industry and of the overall Canadian economy that immediate markets be found for the available surplus.

Western Canada Hydrocarbon Reserves:

A. Ultimate Reserves in the Western Canada Sedimentary Basin:-

For the purposes of this submission, ultimate recoverable reserves of hydrocarbons for Western Canada have been determined by a volumetric method, using for comparison the Mid-Continent area of the United States, where the types of sediments, types of entrapment, and total geological column are similar. The Western Canada Sedimentary Basin is within the same geological province as the Mid-Continent area, which includes such prolific regions as Texas (exclusive of the Gulf Coast), Oklahoma, Kansas, Eastern New Mexico, Eastern Colorado, and Eastern Wyoming.

Estimated virgin reserves for the Western Canada Sedimentary Basin recoverable by primary methods are as follows:

	Ultimate Reserves
Crude Oil (billions of bbls.)	48
Producible Gas (trillions of cubic feet)	308
Natural Gas Liquids, including Condensate (billions of bbls.)	6.3

For derivation of the ultimate reserves, each portion of the Western Canada Sedimentary Basin has been analyzed separately. We are of the opinion that these ultimate recoverable reserves are conservative, and will be further increased as the quality of exploration and recovery methods are improved. Further particulars with respect to this estimate are contained in the Appendix.

I would now like to ask Mr. Pearson to read the appendix.

MR. PATTILLO: Mr. Chairman, before we get into the appendix, this might be a good place to break for lunch.

THE ACTING CHAIRMAN: Shall we resume at two o'clock this afternoon?

MR. PATTILLO: Two o'clock.

---Whereupon the hearing adjourned, at 12.13 p.m., until 2.00 p.m.

---On resuming at 2.00 p.m.

THE ACTING CHAIRMAN: Gentlemen, we will now resume our hearing. I think we were starting with Exhibit 1 and Mr. Loughney was having someone else read.

MR. LOUGHNEY: Mr. Pearson.

MR. PEARSON: Gentlemen, if you will turn to the appendix at the back of the brief there which Mr. Loughney has been reading, page 1 of the appendix, I will read from that.

Ultimate Hydrocarbon Reserves in Western Canada Sedimentary Basin: The Western Canada Sedimentary Basin (Figure 1) encompasses that portion of Canada lying between the Precambrian Canadian Shield on the east and the Cordillera on the west, the 49th Parallel on the south and the Arctic Ocean on the north. This region is almost synonymous with the term Interior Plains, but also includes the foothills belt and the Intermontane basin of the Cordillera. It excludes the Arctic Archipelago.

Within this basin, 602,000 square miles are considered favourable for oil and gas exploration. (Table 1.) This area is underlain by approximately 789,000 cubic miles of favourable sediments lying west of the 1,000 foot isopach. Within this area, the base is the Precambrian basement, or a maximum depth of 20,000 feet.

The Western Canada Sedimentary Basin is the most important petroleum region in Canada, not only because of the large reserves of oil and gas that have already been discovered within its boundaries in a very short time, but because of the large volume of prospective sediments and the presence of many types of traps considered favourable for oil and gas accumulation.

The Western Canada Sedimentary Basin is the northern extension of the Mid-Continent region of the United States. (Figure 2). As these two areas have a similar geological history and the same conditions for the entrapment of hydrocarbons, they are regarded geologically as one petroleum province.

The ultimate reserves of petroleum and natural gas for Western Canada were determined by comparing this region with the volume of sediments, reserves, and exploration history of the more heavily explored Mid-Continent portion of this petroleum province. This method, described by L. G. Weeks, (Weeks, L.G. "Concerning Estimates of Potential Oil Reserves", Bull, Amer.Assoc. Petrol, Geol. Volume 34, No. 10, pp 1947-1953 - 1950) consists of relating ultimate reserves to the volume of favourable sediments and the exploratory effort.

Up to December 31, 1957, the Mid-Continent

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[illegible]

[illegible]

[illegible]

region had found average virgin reserves (Virgin reserves are defined as the sum of cumulative production and proven and probable recoverable reserves) of 63,575 barrels of liquid hydrocarbons and 254 million cubic feet of virgin reserves of natural gas per cubic mile of favourable sediments. The ultimate recoverable reserves predicted for the entire continental United States are approximately three times the present day virgin reserves. (The current total virgin reserves for the United States are 91 billion barrels of liquid hydrocarbons and 400 trillion cubic feet of gas. The ultimate total virgin reserves are estimated by eminent authorities to be between 210 billion and 300 billion barrels of liquid hydrocarbons and 1,200 trillion cubic feet of natural gas.) (Hill, K. E., Hammer, H. D., and Winger, J. G., "Future Growth of the World Petroleum Industry", the Chase Manhattan Bank, New York, pp. 27-29 - 1957.) Applying this "Ultimate Reserve Factor" ("Ultimate Reserve Factor" is defined as the ratio of ultimate virgin reserves to present virgin reserves.) of three to the Mid-Continent results in ultimate virgin reserves of 190,725 barrels of liquid hydrocarbons and 763 million cubic feet of natural gas per cubic mile of prospective sediments in this region.

Similarly, the ultimate virgin reserves of gas, natural gas liquids (All reserves and reserve growth were estimated using total liquid hydrocarbons.

The reserves of natural gas liquids were determined by using the present day ratios of natural gas liquids to natural gas, in barrels per million cubic feet, for the various portions of the Western Canada Sedimentary Basin, and applying these ratios to the predicted reserves of natural gas. Reserves of natural gas liquids obtained in this manner were subtracted from the estimated reserves of total hydrocarbons to obtain ultimate virgin reserves of crude oil) and crude oil have been determined by two steps for the Western Canada Sedimentary Basin.

First, this was done by analyzing portions of this basin and estimating the proven reserves within them when an exploratory effort equivalent to the current Mid-Continent exploratory level was reached. (This estimate took into consideration geologic history, volume and type of sediments, and present virgin reserves.)

Second, an "Ultimate Reserve Factor was then applied to each portion. This Factor is approximately equal to two for the whole of Western C.nada, and is considered extremely conservative compared to the figure of three commonly used for the United States. Thus, ultimate virgin reserves were determined for the Western Canada Sedimentary Basin of 69,380 barrels of liquid hydrocarbons and 390 million cubic feet of gas per cubic mile of sediments.

Therefore, the total ultimate virgin reserves

for the Western Canada Sedimentary Basin, exclusive of the McMurray oil sands, determined by this company are as follows:

	Ultimate	
Natural Gas (Reference:Table II)	308	trillion cubic feet
Natural Gas Liquids	6.3	billion barrels
Crude Oil	48.4	billion barrels

The petroleum industry in Western Canada has a present virgin reserve of some 33.2 trillion cubic feet of natural gas. This is an impressive total when it is considered that exploration of this vast and potentially prolific region is still in its infancy.

At the present time, the industry has drilled one exploratory test (an exploratory test is defined as any well that is drilled in search of new and as yet undiscovered pools or in search of long extensions of pools already discovered) for every 111 cubic miles of prospective sediments. When this is compared with a density of approximately one exploratory test for every 7.5 cubic miles of favourable sediments in the continental United States, it is immediately apparent that the Western Canada Sedimentary basin is still comparatively untapped.

The paucity of exploration is even more apparent when it is considered that the three prairie

provinces, the area of most concentrated drilling to date, contains 6,200 townships out of a total of 11,050, or more than 55 per cent of the townships that do not have a test of any description within their boundaries. In addition, only the upper portion of the stratigraphic column has been explored by drilling. Less than 400 wells out of a total of 22,500 wells have penetrated the entire sedimentary section to the Pre-Cambrian.

As of December 31, 1957, virgin producible natural gas reserves of 4.6 billion cubic feet per exploratory well had been discovered in Western Canada. This is approximately 2.5 times the U. S. discovery rate of 1.85 billion cubic feet per exploratory well. Assuming reasonable incentives exist, it is estimated that 25,000 exploratory wells will be drilled in Western Canada during the next 25 years. This represents an average rate of 1,000 exploratory tests per year.

The history of the U. S., particularly the Mid-Continent, has shown no appreciable decline in the discovery of additional natural gas reserves over the past 30 years. Therefore, we have assumed that the present rate at which each exploratory well in Western Canada adds to our gas reserves will also remain reasonably constant, and will result in total virgin reserves of 150 trillion cubic feet of natural gas by 1982.

A brief appraisal of the gas potential of each of the geological regions of the Western Canada Sedimentary Basin is as follows: Present virgin gas reserves of Manitoba and Saskatchewan are small, and are indicative of a relatively small ultimate potential of this region. Most of the gas will be found in Western Saskatchewan or in pre-Devonian beds in southern Saskatchewan.

The Alberta Plains are subdivided into the Sweetgrass Arch area of Alberta, Alberta Basin, Peace River Arch and Basin, and northern Alberta.

It is expected that considerable gas will be found in southern Alberta (Sweetgrass Arch area) in the near future as the intensity of exploration is increased. This area has, at best, been only scantily explored in relation to the southern part of the Alberta Basin.

In the southern part of the Alberta Basin, considerably more gas will be found, particularly from the Mesozoic sediments of the eastern portion of the province and from the Cretaceous, Mississippian and Devonian of the western part. The northern part of the Alberta Basin is relatively unexplored and the potentials of this area are great, both from the Palaeozoics and Mesozoics.

To date the Peace River Arch and vicinity have been noted largely for the occurrence of gas. This area is relatively unexplored and considerable

[illegible]

quantities of gas should be found. Exploration in the Northern Alberta Basin, although in its infancy, has yielded ample evidence of gas. The thick favourable sediments within this basin suggest a vast amount of gas will be discovered.

In the Alberta Foothills, the major gas fields found to date all lie within the southern foothills. Of these fields, Jumping Pound, Turner Valley, and Pincher Creek account for about 20 per cent of the virgin gas reserves. I might emphasize that is 20 per cent of the total gas reserves of Western Canada. The Central Foothills Area has just come into prominence, and recent discoveries such as Stolberg, Lovett River and Panther Dome indicate a great potential for this part of the foothills.

The northern foothills of Alberta are unexplored to date and large reserves of gas undoubtedly occur as the sediments and structures are similar to those both south and north.

The deep and difficult drilling and heavy exploration programs required add to foothills costs, but the attractionof thick pay sections in giant structures will result in an acceleration of exploration activity in the foothills area. We feel the gas reserves of the foothills will be increased to 51.6 trillion cubic feet.

Numerous gas fields have been discovered

in the Mesozoic and Palaeozoic in the Fort St. John area of northeastern British Columbia, although the area has only been lightly explored. The northermost part of British Columbia plains have been tested by only a few exploratory tests, but gas in large quantities has been found as far north as Fort Nelson. Inasmuch as the types of sediments are favourable and the thicknesses are great, a large number of gas discoveries will be made.

The intensity of exploration effort will slowly increase throughout northeastern British Columbia and, we feel, should reach its peak about 1985.

The Northwest Territories and Yukon are relatively unknown as to their potentials. Their geographical position, distance from markets and lack of detailed geological data have forced us to downgrade this area but the Territories do hold great promise. However, improved equipment, new roads and other facilities are helping to overcome the obstacles. Exploration in the Territories should reach its highest intensity in the period after 1990.

In conclusion, we feel that this estimate of virgin reserves is conservative. These reserves will be increased as the quality of exploration and the means of recovering oil are improved through technical advancement. The point in time at which

these ultimate reserves will be attained is difficult to determine since it is governed by economics, exploratory methods, and many other intangible factors.

TABLE 1

WESTERN CANADA SEDIMENTARY AREA

Area & Volume of Sediments

Area	Total Area Square Miles	Prospective Area(1) Square Miles	Prospective Area - Volume Favourable Sediments in Cubic Miles(2)
Manitoba & Saskatchewan	234,677	181,813	164,011
Alberta Plains	225,549	210,068	287,110
Alberta Foothills	13,301	13,301	49,168
Northeast British Columbia	51,252	51,252	125,765
Yukon & Northwest Territories	228,546	145,369	163,112
Western Canada Total	753,325	601,803	789,166

(1) Prospective Area: Area where sediments are thicker than 1,000 feet.

(2) Volume of Sediments: Sediments of prospective area to a maximum of 20,000 feet.

TABLE II

WESTERN CANADA SEDIMENTARY BASIN

Estimated Producible Reserves of Natural Gas

Area	Volume Favourable Sediments in Cubic Miles	Total Virgin Reserves Dec.31, 1957 Millions of Cubic Feet	Est.Producible Reserves End 1982 Millions of Cubic Feet	Ultimate Producible Reserves - Millions of Cubic Feet
Manitoba & Saskatchewan	164,011	1,138,509	4,000,000	4,800,000
Alberta Plains	287,110	21,988,863	70,000,000	143,700,000
Alberta Foothills	49,168	7,607,342	40,000,000	51,800,000
Northeast British Columbia	125,765	2,470,580	35,000,000	89,100,000
Yukon & Northwest Territories	163,112	59,979	1,000,000	19,000,000
Western Canada Total	789,166	33,265,273	150,000,000	308,400,000
Mid-Continent Region Total	780,000	198,434,000		595,290,000

Gentlemen, it is my understanding that Mr. Loughney will now proceed with page 5 of the brief.

BB

MR. LOUGHNEY: B. Present Reserves: British American has prepared the following estimate of the present proven and probable oil, gas, and natural liquid reserves of Western Canada:

	Present Reserves (Proven and Probable)
Crude Oil (billions of bbls.)	3.7
Producible Gas (trillions of cubic feet)	28.591
Natural Gas Liquids including Condensate (billions of bbls.)	0.595

The gas reserves referred to above are on a producible basis, and have been computed by including raw separator gas for dry gas fields and solution gas fields where product recovery facilities are presently available or in course of construction. For wet gas fields, where extraction facilities are anticipated within the next few years, the raw separator gas has been shrunk for the liquid product expected to be obtained from plant operations. To obtain marketable or pipeline gas, it is necessary to deduct from the producible gas reserve, plant and lease fuel requirements, line losses and reserves considered not readily accessible to markets.

The above estimates were prepared for verification purposes. Inasmuch as the estimate of gas reserves agrees within 6 per cent of the corresponding Canadian Petroleum Association estimate

of proven and probable gas reserves, and since the latter estimate was prepared on the basis of geological and engineering data not available to British American, we endorse the C.P.A. estimate.

The present marketable gas reserves in Western Canada are considered to be 27.5 trillion cubic feet. This figure has been derived by taking the proven and probable producible gas reserve of 30.2 trillion cubic feet as reported by the C.P.A. and applying an appropriate reduction for conversion to marketable gas.

We have prepared a glossary of terms which may be helpful to the members of the Commission, by way of definition, and I would like to read this now for the record.

The following is the definition of the terms used in this brief:

Producible Reserves: Producible reserves are the volumes of gas that can be recovered after reduction has been made for the volumes of liquid products or sulphur that it is anticipated will be extracted by means of plant operations. For wet gas fields this shrinkage correction is always applied; for solution gas fields, this correction is made only where plant facilities are already installed or under construction.

Marketable Reserves: Marketable reserves (or pipeline gas) represent producible reserves less

plant and lease fuel requirements, line losses and reserves presently considered not readily accessible to markets.

Present Reserves: Present reserves represent our best estimate of the remaining reserves that will be recovered. In this report the present reserves are considered to be the sum of the proven and probable reserves. Present reserves may be present producible reserves or present marketable reserves.

Virgin Reserves: Virgin reserves are the cumulative reserves which have been discovered up to a certain date, and are equal to the reserves remaining at that date plus the reserves which have already been produced. Virgin reserves may be virgin producible reserves or virgin marketable reserves.

Ultimate Reserves: Ultimate reserves are the ultimate virgin reserves that can be recovered from a geologic province. Ultimate reserves are also referred to as potential or possible reserves.

If you will turn now to page 6, please, we will continue with the brief.

Growth of Reserves and Consumption of Gas: We intend to demonstrate to the Commission that the relationship between the growth in reserves and the growth in consumption provides a realistic basis from which a sound gas export policy can be derived.

Reserve Growth: In the Appendix it is

shown that by pursuing an exploration program involving the drilling of an average of 1,000 exploratory wells per year, a virgin producible gas reserve of 150 trillion cubic feet can be discovered and developed in Canada by 1982. This reserve represents approximately 134 trillion cubic feet of marketable gas.

Exhibit I shows for both Canada and the United States the average annual reserves discovered over five-year periods. The data are shown in tabular form in Exhibits III and IV. In Canada between 1951 and 1955 the average annual increase in reserves has been 2.8 trillion cubic feet, accomplished without extensive wildcat drilling for gas and in the absence of incentive for development.

We are confident that with the incentive for exploration and development that will come from export markets, the discovery rate and annual growth in reserves will show a very marked increase. The reserve growth, resulting from exploration and development, need reach only 4.4 trillion cubic feet per year by 1965 and remain constant thereafter, in order to attain a virgin marketable reserve of 134 trillion cubic feet by 1982.

Exhibit I also shows clearly that the stimulus of an increasing annual demand, such as has been experienced in the United States, will result in a marked increase in the rate of discovery.

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Over the period 1920 to 1957, demand for gas in the United States increased over tenfold -- from 0.76 trillion cubic feet per year to 10.36 trillion cubic feet per year. Over this same period, the average annual increase in reserves multiplied over twenty times -- from 0.76 trillion cubic feet in 1920 to 22.65 trillion cubic feet in 1957.

The experience of the United States in reserve growth over the period 1920 to 1957 indicates clearly that the projected growth of gas reserves for Canada from 1957 to 1982 is conservative.

Exhibit II shows the cumulative growth of Canadian and United States reserves. Virgin marketable gas reserves in Canada have increased from approximately 2 trillion cubic feet, following the development of the Turner Valley Gas Field in Alberta in 1924, to 21.6 trillion cubic feet at the end of 1955. The reserve of marketable gas to be discovered by 1982 of 134 trillion cubic feet is, of course, only a portion of the ultimate Canadian gas reserve.

The estimated gas reserves and consumption of gas in Canada at the end of 1957 are as follows:

Remaining Reserve	27.5 trillion cubic feet
Cumulative Consumption	1.7 trillion cubic feet
Annual Consumption	0.180 trillion cubic feet per year

Consumption Growth: The growth of consumption of gas in Canada and the United States is shown in Exhibits I and II. Exhibit I shows the average annual consumption over five-year periods. Exhibit II shows the cumulative growth.

It will be noted from Exhibit II that cumulative consumption of natural gas in Canada is

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expected to increase from 1.7 trillion cubic feet in 1957 to 27.8 trillion cubic feet in 1982, the difference of 26.1 trillion cubic feet representing the estimated total requirements of Canada and authorized export projects to the United States over the period.

I believe it would be helpful if, at this point,I would call on Mr. Strand to explain more in detail, the charts.

MR. STRAND: Mr. Chairman, I call your attention to two exhibits that we have here; Exhibit I and Exhibit II. They are both repeated in the back of our brief.

Exhibit I shows the growth in annual marketable gas reserves and gas consumption in Canada and the United States, the United States being shown in blue, Canada in red. At the left hand ordinate are the growth of reserves and consumption in trillions of cubic feet per year plotted against time.

In Exhibit II we see virgin marketable gas reserves and gas consumption on cumulative basis rather than on a rate basis as was shown in Exhibit I; exactly the same data used in Exhibit I is re-plotted in Exhibit II on a cumulative basis.

The left hand ordinate shows virgin reserves and cumulative consumption in trillions of

cubic feet plotted against time.

We have just noticed in the glossary, virgin reserves are defined as "remaining reserves at any date plus all cumulative production to that date".

In the United States in 1920,760 billion cubic feet of new gas reserves were being added each year. That was exactly equivalent to the rate of consumption in the United States in 1920, which was, also, 760 billion cubic feet per year.

Referring to the cumulative curve in Exhibit II, in 1920 the virgin gas reserves were 17 trillion cubic feet. The cumulative consumption to that time was 2 trillion cubic feet, leaving a remaining reserve in the United States as of 1920 of 15 trillion cubic feet. By dividing the remaining reserves at a particular time by the current consumption rate you calculate what is assumed the remaining life of reserves in the United States in 1920 that would be computed. By taking the 15 trillion cubic feet remaining reserves and dividing by the current consumption rate of 760 billion cubic feet per year, on that basis the remaining life of reserves in the United States was 20 years.

Following 1920, there was a marked increase in the discovery of gas in the United States until, by 1957, 22.7 trillion cubic feet of new

gas reserves were being added each year.

There was a corresponding increase in demand in the United States during the period until in 1957, 10.4 trillion cubic feet of gas was being consumed each year.

Referring to the cumulative chart during this 37-year period from 1920 to 1957, 372 trillion cubic feet of new gas had been added, leaving a virgin reserve in 1957 of 389 trillion cubic feet. The increase in demand resulted in cumulative demand at that date of 141 trillion cubic feet, leaving a remaining reserve of 248 trillion cubic feet.

We have plotted the reserves and consumption on the cumulative basis in Exhibit II using semi-logarithmic paper so we would be able to include the large figures necessary so that the two could be compared. On this semi-logarithmic paper it appears the reserve growth and consumption growth are more or less parallel.

I would just like to point out at this time the increase in remaining reserves; they are not, in actuality, parallel, but, actually, in 1920 the remaining reserve was 15 trillion. In 1957, 248 trillion. So, the remaining reserve actually grew six times during the period.

In Canada the gas reserves increased from, approximately, 2 trillion cubic feet during

the 1920's following the development of Turner Valley up to 21.6 trillion cubic feet in 1955. The rate of reserve growth during the period 1951 to 1955 was 2.8 trillion cubic feet per year. The present remaining reserves in Canada, at the end of 1957, are considered to be 27 1/2 trillion cubic feet. During 1957 the average consumption of reserves was 180 billion cubic feet. Converting this to remaining life of reserves, you calculate 153 years.

I would like to make one correction : I said that the remaining reserves in the United States had increased six times. I believe that is, actually, 16 1/2 times during the period.

In considering the future prospects for reserve growth in Canada, we have heard in the appendix to our brief that the ultimate virgin gas reserve that could be discovered in Canada is 308 trillion cubic feet. You will note that that is quite a way off our graph. We also noted in the appendix that by pursuing an exploratory effort involving drilling of only 1,000 exploratory tests per year, approximately equivalent to the number drilled in 1957, that 150 trillion cubic feet of gas could be discovered by 1982 on a marketable basis. That represents 134 trillion cubic feet that we show in 1982. The development of that 134 trillion cubic feet of gas by 1982 can be obtained

by a reserve growth building up to 4.4 trillion cubic feet per year as compared with the 2.8 trillion cubic feet during this period, and holding that 4.4 trillion cubic feet per year constant throughout the period.

In our appendix we showed how the ultimate reserves were computed with reference to the mid continent area in the United States, an area that is, from the standpoint of geologic environment, very similar to that in Canada, from the standpoint of the lines of sediments the two are, actually, identical. Therefore, it would be interesting to compare the virgin reserve that we have estimated for Canada, 134 trillion cubic feet, with the actual reserves in the mid continent today. Actual reserves in the mid continent today are, 198 trillion cubic feet. You see, this 134 trillion cubic feet which we postulate will be obtained in 1982, represents only two-thirds of the virgin reserves that have actually been discovered on the mid continent today.

We have estimated the future demand in Canada from the period 1957-82 at 26.12 trillion cubic feet. This, when applied to our past consumption of, approximately, 2 trillion cubic feet, our cumulative demand at the end of 1982 will be 28 trillion cubic feet. This, deducted from 134 trillion cubic feet of virgin reserves, leaves us

with a remaining reserve of 106 trillion cubic feet, actually four times the remaining reserves during 1957.

I have mentioned that we have estimated that Canadian demand during the next 25-year period at 26.12 trillion cubic feet. The development and background which were utilized in obtaining this estimate are discussed in the next portion of our brief.

MR. PATTILLO: Just before you go on, Mr. Strand, would you mind explaining on your cumulative chart two things: how many times the annual consumption has increased since 1920 and, assuming that no further reserves were found on the projected right hand columns of both United States and Canada, how long the reserves would last at the rates of consumption which you show in 1957 in the United States and which you project forward to 1982 in Canada?

MR. STRAND: We see from this graph that the United States consumption in 1957 was 10.4 trillion cubic feet. That, compared with the remaining reserves of 248 trillion cubic feet, the remaining life of the United States reserves today is 24 years; actually, 4 years higher than it was in 1920.

In Canada, we saw by taking the present reserve of 27 1/2 trillion cubic feet, divided by

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our present consumption rate, 180 billion cubic feet per year, the remaining life of the reserves would be 153 years.

In 1982 the remaining reserves are 106.2 trillion, and the annual consumption rate, 1.5 trillion cubic feet per year; on the same basis as the other calculations, the remaining life works out to 71 years.

MR. PATTILLO: Thank you.

MR. LOUGHNEY: Mr. Chairman, if you will turn to page 8, I will continue with the submission.

This estimate is shown in detail in the following table:

	Total Requirements 1958 - 1982 (trillion cubic feet)	
Canadian Markets		
Alberta	6.16	
Saskatchewan (from Medicine Hat and local fields)	0.52	
Eastern Canada, Saskatchewan and Manitoba via Trans-Canada Pipe Lines	12.21	
British Columbia via Westcoast	2.71	
Total Canada		21.60
Exports to United States		
Canadian Montana (authorized)	0.27	
Westcoast (authorized	2.50	
Trans-Canada (proposed)	1.75	
Total Export to United States		4.52
Total Canadian and Export		26.12

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Relationship Between Supply and Demand: Our studies indicate that about four times as much gas will be discovered during the next 25-year period as will be required to meet the total Canadian demand and presently authorized export to the United States during those years.

The fact that growth in demand for gas will stimulate the development of new gas reserves is clearly demonstrated by an analysis of the trends in the growth of gas reserves and demand for gas in the United States.

We believe that the stage that has been reached in the development of gas reserves in Canada closely parallels that of the United States in 1920.

In 1920 remaining gas reserves in the United States were 15 trillion cubic feet as compared with 27.5 trillion cubic feet in Canada at the end of 1957. Consumption of gas in the United States in 1920 was 760 billion cubic feet, or exactly equivalent to the then current rate of growth of reserves. The life of the remaining gas reserves in 1920 in the United States was 20 years, computed on the basis of the then current consumption rate, and the remaining gas reserves in 1957 in the United States was 24 years.

The 1920 consumption rate of 760 billion cubic feet per year is comparable to the demand for Canadian gas in 1960 following the necessary

build-up periods. The life of the remaining Canadian gas reserves in 1960 is estimated to be 58 years.

The following table summarizes the data presented in graphical and tabular form in the exhibits relating to this section.

	U.S. (Actual) 1920-57		Canada (Projected) 1958-1982	
	Start of Period	End of Period	Start of Period	End of Period
Annual Growth				
Growth of Gas Reserves (trillions of cubic feet per year)	0.76	22.7	2.3	4.4 (1)
Annual Demand (trillions of cubic feet per year)	0.76	10.4	0.18	1.5
Average Annual Demand (billions of cubic feet per day)	2.1	28	0.36	4.1
Cumulative Growth				
Virgin Marketable Gas Reserves (trillions of cubic feet)	17	389	29.2 (2)	134
Cumulative Demand (trillions of cubic feet)	2	141	1.7	27.8
Remaining Marketable Gas Reserves (trillions of cubic feet)	15	248	27.5	106.2
Life				
Life (Rem.Reserve/ Current Prod.Rate) Yrs.	20	24	153	71

Table (cont'd)

(1) It is assumed, that the annual growth in gas reserves for Canada will increase gradually from 2.3 trillion cubic feet per year in 1958 to 4.4 trillion cubic feet per year in 1965, and we assume it would remain constant thereafter.

(2) The virgin marketable gas reserve figure of 29.2 trillion cubic feet does not include an estimated 1.3 trillion cubic feet of flared gas.

Need for Markets to Assure Continuing Growth of the Industry: The petroleum industry in Canada, including both oil and gas, has now reached a critical stage in its development.

Included as Exhibit V is our estimate of the industry's investment and realization from production for the period 1947 to 1957. The total expenditures by the industry in oil and gas properties during this period have been $3.2 billion, of which only $1.9 billion has been recovered to date, so that expenditures to date have exceeded income by $1.3 billion.

In 1957, the industry expended in exploration, development and producing operations $547 million, and received, after royalty, income of $400 million, or $147 million less than the amount expended during the year. An excess of expenditure over income has occurred annually since 1947 and has necessitated the attraction of additional new capital each year.

We consider this to be a very significant statement and I would like Mr. Yarnell to explain it more fully by referring to Exhibit V.

MR. YARNELL: Exhibit V in your brief and this accompanying figure is entitled "Estimated Expenditures and Income, Exploration and Development Activity, Western Canada, 1947 to 1957".

It is an estimate, by years, of the total

outlay of income of companies engaged in exploration and development work in Western Canada. The estimate has been prepared by British American through published statistical information supplemented, where necessary, with estimated expenditures we have arrived at from clerical data.

The sections of the outlay portion of the exhibit are divided into exploration costs, which are land acquisitions and rentals; geological and geophysical, and wildcat drilling, and then development drilling costs and production expense.

The income portion refers to income from oil and gas, separately; and, of course, deduction for royalty payments.

The excess of outlay over income each year during the period has been given as net investment to be recovered. An index measurement of the total outlay, income and net investment to be recovered has been shown in terms of dollars per barrel produced per annum.

There is no provision in these estimates for expenditures for gas gathering or gas processing facilities or pipelines.

In 1947 the industry expended on exploration and development approximately $25 million, and its income in that year was approximately $18 million.

In 1952, the mid-point of this period, the total outlay in exploration development is $318 million. The income at that time was $130 million. This expenditure was approximately 12 times the 1947 rate and the income was approximately 7 times the 1947 rate.

In 1957 the industry expended $547 million and estimated income of $400 million, in addition to the net investment to be recovered of $147 million. The cumulative position of the industry over this period is an outlay of $3.1 billion and a gross realization of $2.1 billion, approximately, from oil and gas sales, oil contributing $2 billion and gas $72 million, approximately 3.42 per cent of the total, and a net, after royalty, of $1.9 billion.

As a point of interest in the exhibit, you will note the receipts of mineral owners over this period from acquisition costs, rentals and royalties approximates $1 billion.

Finally, at the end of 1957 we estimate the industry's net investment to be at $1.3 billion.

MR. LOUGHNEY: Some indication of the task confronting the petroleum industry in supplying Canada's future energy needs can be taken from the fact that in 1953, 44 per cent of energy requirements were supplied by oil and gas, and in 1980 it has been estimated that 59 per cent will come

from these sources ("Canadian Energy Prospects" prepared for the Royal Commission on Canada's Economic Prospects, by John Davis, March, 1957). The magnitude of this task in financial terms dwarfs the substantial investment made to date in oil and gas development.

Provided markets develop in an orderly manner, we estimate that in the next ten years the industry in Western Canada will spend $3.3 billion in exploration, $3.1 billion in development and $1 billion in gas gathering and processing facilities, for a total outlay of $7.4 billion. It must again be emphasized that this program is contingent to a large extent on the development of markets which will provide the funds for this expansion.

Virtually all of the industry's income to date has come from oil. Gas has contributed only 3.4 per cent of the total income realized from oil and gas production in the last ten years.

It must be recognized that there is a high element of risk associated with oil and gas exploration. An additional consideration is the uncertainty of markets, which are essential to the development of gas reserves. This is especially significant in the case of certain gas fields which require the expenditure of very large amounts for processing plants before the gas can be made available for market. It is, therefore, imperative that

markets be assured with the prospect of a reasonable return on investment before these expenditures can be undertaken.

The immediate problem confronting the industry today is the development of gas markets that will provide a return on the large frozen investment made to date and furnish the funds necessary to carry on with the further development of Canada's gas resources.

It is inevitable that if present available export markets are denied, a re-appraisal of the industry's overall exploration program must follow. The probable result will be some deferment of planned projects, together with a shifting of emphasis in exploration activity away from areas where gas is likely to be encountered. This could cause serious dislocation in the development of both oil and gas reserves, adversely affecting not only the petroleum industry but the overall economy as well.

Policy for the Utilization of Canadian Gas Reserves: Heretofore in determining volumes of gas surplus to requirements, it has been the practice to relate future needs for an extended period to proven reserves as at a particular time. In our opinion this approach is an erroneous one, which, if continued, will serve to delay unduly the disposition of gas reserves. Any such delay will, in turn, most certainly have an adverse

effect on the intensity of gas exploration and development.

We believe that the geological environment of Western Canada is highly favourable to the discovery of ample reserves to supply Canada's own future needs with large volumes available for export, provided there is a market incentive for the development of these reserves. The additional reserves, which will be found for any given scale of exploratory effort, can be estimated with no less a degree of accuracy than future consumption. We are, therefore, firmly of the opinion that in determining the disposition of present reserves, future needs should be related to potential growth in reserves.

Illustrations of the inherently conservative nature of proven reserve estimates and the fallacy of relating future needs solely to present proven reserves are set forth in the following paragraphs.

An examination of the gas reserve estimates of the Alberta Oil and Gas Conservation Board for the years 1950 to 1957 indicates that, with each succeeding year's report, gas reserves associated with discoveries reported the previous year have invariably increased.

For example, reserves from new discoveries for the years 1951 to 1956, as compared with the

reserves assigned these fields in 1957, is given in the following table:

Year	Gas Reserves Discovered During Year	Gas Reserves Discoveries in Col.(2) As Seen in 1957	Increase in Originally Assigned Reserves
	(trillions of cubic feet)		
1951	0.2	1.9	1.7
1952	1.4	1.9	0.5
1953	1.1	3.9	2.8
1954	0.6	1.8	1.2
1955	0.4	0.8	0.4
1956	0.6	1.3	0.7
Total	4.3	11.6	7.3

This represents an increase of 170 per cent.

Just as the proven gas reserve does not represent the true potential of fields currently being developed, neither does it represent the potential of the large number of single-well gas fields in Western Canada today. Of some 700 capped gas wells in Western Canada, an estimated 200 are associated with a like number of single-well gas fields which have remained completely undeveloped to date. The proven reserves assigned to these wells have been on the basis of the standard spacing unit of one section, in accordance with recognized practice.

British American has an interest in 38 such single-well gas fields, the proven reserves of which are currently estimated to be 400 billion cubic feet. After examining all of the pertinent subsurface and geophysical information at our disposal, we estimate that with normal development drilling, the ultimate reserve to be recovered from these fields will be approximately two trillion cubic feet, or five times the present proven reserve. This represents a potential reserve per single-well gas field of about 50 billion cubic feet.

Assuming that this ratio can be applied to the total of 200 single-well fields, potential reserves of 10 trillion cubic feet might be assigned these fields.

An estimate has been prepared of the gas volumes required to supply Canadian and export needs to 1982 at current (1957) rates of consumption, allowing for an initial build-up period for Westcoast and Trans-Canada. A table summarizing this requirement is as follows:

	Total Requirements 1958-1982 (trillions of cubic feet)
Province of Alberta	2.89
Province of Saskatchewan	0.30
Montana, Saskatchewan Power and Peace River Transmission deliveries from Alberta	0.53
Trans-Canada deliveries from Alberta	4.92
Westcoast deliveries from Alberta and British Columbia	4.10
Total	12.74

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As indicated in the table above, 12.74 trillion cubic feet is the volume of gas necessary to meet Alberta's 25-year needs at current consumption rates plus exports from Alberta and British Columbia. When this volume is deducted from present Canadian marketable gas reserves of 27.5 trillion cubic feet, there remains a present surplus of 14.8 trillion cubic feet.

While portions of this gas will be required in future years to meet increasing Canadian demand, until additional markets are established its future disposition remains uncertain.

We endorse the generally accepted methods currently employed for the determination of proven reserves. It is our contention, however, that it is not realistic to ignore reserve growth potential to meet long term requirements and to appraise the adequacy of reserves to meet these requirements solely on the basis of proven reserves.

Experience in the United States during the period 1920 to 1957 has indicated a phenomenal growth of gas reserves. Even with the present demand of 10 trillion cubic feet per year, the remaining life of reserves today is in excess of the remaining life in 1920.

This experience has demonstrated that an adequate market incentive will assure the development of gas reserves in quantities more than

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sufficient to meet an increasing demand.

British American is of the opinion that the most realistic approach to an appraisal of the adequacy of gas reserves to meet future needs is to relate such needs to the trend in the growth of reserves.

Conclusion: Our conclusion from studies made by British American on this whole subject may be summarized as follows:

In determining volumes of gas which can be made available for export, it is unrealistic to ignore potential growth, and to appraise the adequacy of reserves to meet future needs solely on the basis of present proven reserves.

The industry has already established an impressive growth rate from an exploration program directed mainly to the search for oil, and with a minimum of incentive for gas development.

In view of the fact that the geological environment in Western Canada is so favourable for further discoveries, we are of the opinion that the only realistic method of providing for estimated long-term needs is to relate such needs to the potential growth in reserves.

Canada has, at the present time, and if the proper market incentive is provided, will continue to have in the future, surpluses of gas available for export, after adequate provision has been made

for her own requirements.

Consideration should therefore be given to permitting the export of additional volumes of gas at the earliest possible date.

THE ACTING CHAIRMAN: Mr. Pattillo?

MR. PATTILLO: Thank you.

Q. Mr. Loughney, I understood you to say that your company has reserves approximately amounting to 3 trillion?

MR. LOUGHNEY: Yes, sir.

Q. And, of that, approximately 1 1/2 is under contract?

MR. LOUGHNEY: That is correct.

Q. Is that all under contract to Trans-Canada?

MR. LOUGHNEY: No.

Q. Approximately what proportion of that would be to Trans-Canada?

MR. LOUGHNEY: It is 1.2 trillion; I believe that figure is correct.

The total is 1.445 trillion.

Q. And have you some under contract to Alberta and Southern?

MR. LOUGHNEY: We have only a letter of intent with Alberta and Southern.

Q. With no quantities determined in that?

MR. LOUGHNEY: No, sir.

Q. Have you any gas under contract to

Westcoast?

MR. LOUGHNEY: No, we have not.

Q. Now, these gas reserves that the company presently has, were they discovered by Canadian Gulf, as it then was, or by B.A. or what proportion by Canadian Gulf and what proportion by B.A.?

MR. LOUGHNEY: Well, the largest per cent by far of those reserves were discovered by Canadian Gulf.

Q. When were the assets of Canadian Gulf turned over to B.A.?

MR. LOUGHNEY: On July 1st, 1956.

Q. And that was as a consequence of a scheme between Gulf Oil, of the United States, and B.A. Oil, where there was an exchange of shares of B.A. Oil to Gulf for the assets of Canadian Gulf?

MR. LOUGHNEY: Yes, sir.

Q. Prior to that time in 1956, did B.A. have any interest in Canadian Gulf?

MR. LOUGHNEY: Did B.A. have any interest in Canadian Gulf?

Q. Yes.

MR. LOUGHNEY: No, sir.

Q. And prior to that time, had B.A. carried on, itself, an exploration program in the Canadian west?

MR. LOUGHNEY: Yes, sir.

Q. And some of the reserves that you presently have in hand of gas were discovered by B.A. prior to that date?

MR. LOUGHNEY: Yes, sir.

Q. Now, the other day, Mr. Loughney, in the examination of Trans-Canada, it came out in evidence that in the year 1955 Trans-Canada was having difficulty in arranging its financing and a proposal had been made to it by the Industrial Bank that it would advance monies to Trans-Canada and, in exchange, would take convertible debentures which it could convert, if it saw fit to do so, into shares of Trans-Canada.

The evidence was that at that time Trans-Canada was negotiating for, but had been unable to conclude, a contract with Canadian Gulf for the purchase of gas reserves belonging to Canadian Gulf, and that Canadian Gulf, when they heard of the proposal of the Industrial Bank, took the position that if Trans-Canada accepted that proposal and placed convertible debentures in the hands of the Industrial Bank, an arm of the Crown, then it would refuse to sell its reserves to Trans-Canada.

Do you know anything about that?

MR. LOUGHNEY: Yes, sir.

Q. Would you tell us your version of what happened?

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MR. LOUGHNEY: I would like to read from a memorandum that I have drawn and then, if you have further questions ---

Q. Thank you. Would you read slowly, because the Reporter has to take this down and I want to follow it.

MR. FRAWLEY: Did you reproduce it in copies?

MR. LOUGHNEY: No, sir, I did not.

When the Trans-Canada project suffered its temporary setback following its negotiations with the Industrial Development Bank there was a large segment of the daily press and other publications which placed the primary responsibility on Canadian Gulf. Notwithstanding this vocal criticism, Canadian Gulf felt it would be detrimental to the Trans-Canada project if it were to enter into public statements setting forth its reasons for refusing to contract for the sale of its gas under the conditions then existing.

Mr. Chairman, I cannot emphasize too strongly that Canadian Gulf Oil Company, while believing firmly in the principles and benefits of free enterprise, always conducted its many and varied affairs with all levels of Government in Canada in a wholly co-operative spirit. This, too, has invariably been the policy of The British American Oil Company Limited.

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At the time Trans-Canada was conducting these negotiations with the Industrial Development Bank no gas purchase contract had in fact been entered into between the Pipe Line Company and Canadian Gulf. In addition to difficulty between Trans-Canada and Canadian Gulf relating to essential terms of the contract, Canadian Gulf at the time had grave doubt concerning the economic feasibility of the project. With the assistance of a consultant, Canadian Gulf had undertaken a study of the entire project, including markets, construction and financing, and as a result of this study was convinced that on the basis of the estimates under which Trans-Canada was attempting to finance, the project was not financially feasible.

While Canadian Gulf's studies indicated that the potential market demand in Eastern Canada was substantial, it believed Trans-Canada had been unable to conclude contracts with distribution companies on a firm take or pay basis in volumes sufficient to make the project feasible. The market situation in Quebec was uncertain, and there was considerable evidence that Quebec would not take gas from the project until after it had been in operation for several years. In Ontario, neither Consumers' Gas Company nor Union Gas Company of Canada, Limited, had contracted with Trans-Canada for supplies of Western Canadian gas. In addition,

Union Gas was endeavouring to import gas from the United States, and, to that end, was involved in an application before the Federal Power Commission of the United States.

Construction costs of the project at this stage were uncertain, and Trans-Canada's estimates were in the order of twenty-five to fifty million dollars lower than Canadian Gulf's studies indicated they should have been. Subsequently Trans-Canada had a complete and thorough engineering study made, and this and subsequent events proved that our concern was well-founded.

Canadian Gulf also believed that Trans-Canada would be able to pay higher field prices for gas than had originally been proposed, once a reasonable market potential had been achieved.

These matters were all of vital concern to Canadian Gulf as it was proposed that it would provide a substantial portion of Trans-Canada's gas supply. It will be realized that immediately upon the execution of a contract with Trans-Canada it would have been necessary for Canadian Gulf to commence spending very large sums of money to drill deep, expensive wells and to construct a large and complicated processing plant.

Regardless of the participation of the Industrial Development Bank, Canadian Gulf was convinced that the project was incapable of being

financed in its status at that time. Canadian Gulf was concerned that if the pipeline subsequently failed, and its affairs were placed in the hands of a receiver, the position of gas producers would be materially prejudiced with Trans-Canada in negotiations. This was of vital importance because Canadian Gulf was convinced the price offered to producers for gas was too low, and was endeavouring to negotiate contractual provisions which would have enabled it, as a producer, to benefit in the future from the improving position of the pipeline, which its studies indicated would occur.

The estimated construction costs and other information assembled by Canadian Gulf as a result of its studies did not compare with those which Trans-Canada had placed before various Government agencies. Inasmuch as Canadian Gulf was unable to resolve these discrepancies with Trans-Canada, this introduced yet a further element of uncertainty into the situation.

Under all these circumstances, Canadian Gulf Oil Company did not feel that it was justified at the time in firmly committing its gas to Trans-Canada Pipe Lines Limited.

MR. PATTILLO: Q. Mr. Loughney, I am just going to ask you one question before we have a break. I will assume, for the purposes of this question, that everything you say in that statement

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is correct. Nevertheless, did your company, to your knowledge, at any time state that it would not enter into a contract with Trans-Canada to sell gas to it, if the company entered into the proposed arrangement with the Industrial Bank?

MR. LOUGHNEY: I don't believe that the question was asked of us in that manner.

MR. PATTILLO: Well, we will pursue that after the recess.

THE ACTING CHAIRMAN: We will take a break.

---A short recess.

MR. PATTILLO: Q. Mr. Loughney, I am still dealing with the first problem of Trans-Canada and coming back to the situation of 1955, For how long prior to the fall of 1955 had Trans-Canada been seeking to obtain a gas contract from Canadian Gulf?

MR. LOUGHNEY: Well, I will have to depend on memory but I think probably at various times throughout the year 1955 we had negotiations back and forth.

Q. Did you or did anybody else to your knowledge in Canadian Gulf have knowledge of the negotiations between the Government of Canada and/or the Industrial Bank and Trans-Canada?

MR. LOUGHNEY: No, sir.

Q. Did any person from Trans-Canada at any time tell you or anybody representing Canadian Gulf or Gulf in the United States of the Industrial Bank's proposal to put up money and take down in payment thereof convertible debentures in Trans-Canada?

MR. LOUGHNEY: Are you referring to the time that they were negotiating with the Industrial Development Bank, that we had any knowledge of their negotiations with the bank?

Q. Yes.

MR. LOUGHNEY: No, sir.

Q. Well, did you hear from anybody in

Trans-Canada of the proposal of the Industrial Bank to advance money to Trans-Canada and to take in exchange convertible debentures in the company?

MR. LOUGHNEY: After the negotiations between IDB and Trans-Canada had been completed or as we understood had been completed we were then told of what they would be.

Q. You were told then that the deal would be $70 million would be advanced by the Industrial Bank to the company and in exchange convertible debentures of the company would be issued to the Industrial Bank?

MR. LOUGHNEY: That is correct, that information was relaid to us by a telephone conversation.

Q. Right. Now, what comment did you or anybody in Canadian Gulf or in Gulf of the United States, to your knowledge, make about that information?

MR. LOUGHNEY: We were asked the question and realizing, as you must, that Trans-Canada knew that all our reasons for not signing a contract were related to the terms and the conditions of the contract itself, and there were other matters not expressed in this retrospect which we considered to be of great concern to us in making a decision. We were asked, if I recall it, effectively, this fact: "We have been able to get $70 million through the IDB, does that change

your opinion in any way?" We said, "No".

Q. You said "No"?

MR. LOUGHNEY: "No".

Q. And that meant that up to that time you could not see that it was in the interests of your company to sign a contract with Trans-Canada, that was what they were asking you about, was it, when they said, "Does this change your thinking in any way"?

MR. LOUGHNEY: Our concern again was the ability of Trans-Canada to finance and we did not consider that getting help in that manner was the type of assistance they needed. I think that thought was further expressed by Mr. Nesbitt before this Commission several days ago.

Q. I appreciate that Mr. Nesbitt said that he thought that was where they least needed it in this proposal but that is not really what I am seeking. Why did they call you up and tell you that they had completed an arrangement with the Industrial Bank?

MR. LOUGHNEY: Well, actually, there was no reason for calling us, we were not a party to the contract with Trans-Canada. Our negotiations with Trans-Canada, before they left Calgary for Ottawa, for what purpose we had no idea, had stopped and we were at that point not negotiating with Trans-Canada.

Q. Well, it was essential, was it not, if the Trans-Canada scheme was to go forward, that they make some contract with you for the supply of gas which they presently have under contract?

MR. LOUGHNEY: That is correct.

Q. And at that time you appreciated that and so did they?

MR. LOUGHNEY: That is right.

Q. Now, then, when they phoned you from Ottawa and told you about this proposal to conclude this agreement with the Government, did you discuss that proposal with any other officers in your company or in Gulf of the United States?

MR. LOUGHNEY: Yes, there were two officers of Gulf present.

Q. Who were they?

MR. LOUGHNEY: Mr. Whiteford and Mr. Rhodes.

Q. Mr. Whiteford is the president of Gulf in the United States?

MR. LOUGHNEY: Yes.

Q. And at one time was president of British American Oil in Canada?

MR. LOUGHNEY: Yes.

Q. Who was the other gentleman?

MR. LOUGHNEY: Mr. Rhodes.

Q. What is his position?

MR. LOUGHNEY: He is now a senior vice-

president of Gulf and at that time was vice-president of exploration and production.

Q. What did you discuss with these two gentlemen?

MR. LOUGHNEY: Frankly, we did not have too much discussion. The telephone call came and as I mentioned a while ago it was simply relating to us that there was this opportunity to get some financing through the IDB. The question was, was this in itself enough to make us change our minds about the doubt that we had previously expressed of the feasibility of the project. We did not see that it helped matters at all. The fact of the matter is, we thought we could see that it complicated the problem.

Q. Did you express the view that it was going to complicate?

MR. LOUGHNEY: I think we did.

Q. Why?

MR. LOUGHNEY: Why we thought it would complicate it?

Q. Yes.

MR. LOUGHNEY: Well, there were conditions attached to the loan, there was a conversion feature, there was the naming of a director, there was the naming of a member of the management committee and there were some restrictions as to the ability of Trans-Canada to name its operating heads without

consultation with the IDB. We felt that, in the first place, Trans-Canada attempting any type of financing at that time was premature, they did not have contracts with the consumers and we had serious doubts about the adequacy of their provisions for construction costs, and of course there was the producers' contracts which we had not concluded negotiations on. There were several features about that that we were at odds on, so we felt that at that point the condition had not changed sufficiently for us to change our minds. We were given just as long as you would get in the normal telephone conversation to say either yes or no.

Q. It does not take Mr. Whiteford very long to make up his mind at times, does it?

MR. LOUGHNEY: I find he can make his mind up pretty fast.

Q. Now, what I want to get back to is, why did you think the proposed arrangements with the Industrial Bank were going to complicate matters? Tell us what you said or Mr. Whiteford said was going to be the complication arising from that proposal?

MR. LOUGHNEY: We were not asked to furnish any explanation, we were just told of what the deal was and in effect asked how we felt about it, or did that make any difference as far as our

negotiations with Trans-Canada were concerned.

Q. And you said, "No". Did Mr. Whiteford, or anybody in your presence, representing Gulf of United States or Canadian Gulf, express to any person representing Trans-Canada any opinion of any sort as to the wisdom of this proposal of the Industrial Bank?

MR. LOUGHNEY: As to the wisdom of the proposal?

Q. Yes.

MR. LOUGHNEY: I do not recall that they did, no.

THE ACTING CHAIRMAN: Mr. Pattillo, could you ask the witness to speak to the microphone because we cannot hear him very well.

MR. PATTILLO: Yes, Mr. Chairman. He said he did not recall that they did, no.

Q. Well, Mr. Loughney, if you were there during that telephone conversation in which Mr. Whiteford engaged, you would only hear Mr. Whiteford, or were you on a hook-up so you could hear the other party?

MR. LOUGHNEY: No, I could not hear the other party.

Q. You could only hear Mr. Whiteford?

MR. LOUGHNEY: That is right.

Q. Mr. Whiteford reported to you, afterwards, what the other fellow had said over the phone?

MR. LOUGHNEY: That is correct.

Q. Who was the person at the other end?

MR. LOUGHNEY: Mr. Howe.

Q. The Honourable Mr. C.D. Howe?

MR. LOUGHNEY: Yes, sir.

Q. Did Mr. Whiteford say anything like this to Mr. Howe: "I will sell the gas to the Government, but I won't sell it to the company under any such deal as this that the Industrial Bank is in."

MR. LOUGHNEY: I do not recall that statement.

Q. Well, you just tell us, to the best of your recollection, exactly what you recall Mr. Whiteford said?

MR. LOUGHNEY: All I recall he said

"It did not make any material difference, our decision was the same as it had been before."

Q. And he reported to you that Mr. Howe had called up and had said if the Industrial Bank lends its money, takes convertible debentures, will you be prepared to contract your gas to Trans-Canada? Is that it?

MR. LOUGHNEY: Would that in itself be sufficient for us to change our minds about whatever reservations we had about that.

Q. Subsequent to that day, that telephone conversation, did you or did anybody representing the Gulf Company, to your knowledge, have any conversation with Mr. Howe or Mr. Coates or any other person representing Trans-Canada or the Government of Canada wherein the opinion was expressed the Government should not become a shareholder in Trans-Canada or be put in a position that it could become a shareholder?

MR. LOUGHNEY: I do not recall that there was any such conversation.

Q. When did you first hear that the proposed arrangement with the Industrial Bank was off?

MR. LOUGHNEY: Well, it was several days after the telephone conversation, because we left Vancouver for San Francisco, and then I returned to Calgary and, in the meantime, I had no

contact with anyone in Trans-Canada.

Q. And then when you got back to Calgary, after this trip, somebody told you that the scheme had not gone through?

MR. LOUGHNEY: I saw Mr. Tanner when I returned and he told me that was the case.

Q. Had he expressed any view, as to why it did not go through, to you?

MR. LOUGHNEY: Yes, he did. He expressed the view, if the producers would not sign the contracts, then the project could not go forward.

Q. I am reading from the transcript of February 20, 1958, on page 1992, and I was examining Mr. Nesbitt and I am starting to read the seventh line. This is Mr. Nesbitt speaking:

"Now, the philosophy of the Bank of Canada "was to give us help where we least needed "it. They offered to buy from us $70 "million of convertible debentures and "to leave the rest of the problem to "us.

"I might say that, rather reluctantly, "we agreed to go along with this, provided "it would solve our problem and, in "examining whether it would solve the pro- "blem or not, we found that various "producers did not wish to sell Trans- "Canada gas if the company, through the

"exercise of the convertible option, could "be controlled by the Industrial Develop- "ment Bank. Consequently, the proposal, while, as I say, we had agreed to go "along with it if it did solve our pro- "blem, did not solve our problem, and the "negotiations were discontinued in April, "1955; I think it was April, sir."

Now, did any representative of Gulf, either the Canadian company or the American company, to your knowledge, at any time, take the position that Canadian Gulf did not wish to sell Trans-Canada gas if Trans-Canada, through the exercise of the convertible option, could be controlled by the Industrial Development Bank?

MR. LOUGHNEY: That was one of the objections that we had.

Q. That was one of the objections that you had?

MR. LOUGHNEY: Yes.

Q. Why?

MR. LOUGHNEY: Because we felt it would interfere with the senior financing that Trans-Canada would have to do. They had then over $200 million still to raise and we felt that would still further complicate the matter of financing rather than improve it.

Q. Will you explain why you thought it

was going to further complicate the financing?

MR. LOUGHNEY: Because of the conditions of management control and, also, that the I.D.B. by exercising their conversion rights would have control of the company.

Q. At that particular time your company was the principal producer that had not yet signed up with Trans-Canada?

MR. LOUGHNEY: That is correct. The other companies who had signed up were shareholder companies of Trans-Canada, at least one was a shareholder company, and we were not.

Q. So that it would be fair to say that, so long as your company would not approve of this proposed arrangement with the Industrial Bank, Trans-Canada could not possibly enter into the arrangement because, without your gas, the scheme could not go ahead anyway, could it?

MR. LOUGHNEY: I do not know whether they had any other gas they might have substituted for our gas or not. There was one other consideration. It could not have gone forward without markets any more than it could have without a gas supply.

Q. It is a question which comes first, the chicken or the egg, I suppose.

MR. LOUGHNEY: It is pretty important you have both, whether it is the chicken or the egg.

Q. And you fellows were either half the chicken or the egg?

MR. LOUGHNEY: I think it would be a fair statement, if I may make it, Mr. Pattillo ---

Q. Yes?

MR. LOUGHNEY: In viewing the situation of Trans-Canada, we did not, at any time, think that the Trans-Canada project was not feasible. We felt that our own studies of the markets -- we were in some respects more optimistic than Trans-Canada was of market potentialities. We felt it was in the interests of Canada that the line be built; we felt that gas export had little chance of going forward until a line was built to Eastern Canada and we favoured such a project from the start. Our interest was somewhat different from most other producers inasmuch as the field from which we were producing, the wells were drilled to the depth of about 12,000 feet, and at that time they were costing us, approximately, $1 million each. It would have required an expenditure of $50 million in plants and wells to back any Trans-Canada contract we signed. We had to start drilling our wells and building our plant about the time we signed the contract, if we were going to be in a position to deliver the gas when they needed it.

So, as a consequence, we viewed that

project as if we ourselves were investing money because we would have had to put up very substantial sums of money back of it, and we looked at it in the same cold, calculated manner as we looked at any business deal, and we could not see the Trans-Canada project at that time. We felt they were premature in even attempting the financing. Our view was borne out in their position before the Federal Power Commission by the fact of the decision that came down from the Federal Power Commission on an order that its application was denied and the facts stated by the Commission, at that time, gave Trans-Canada a further opportunity to improve its entire situation so it could be dealt with by the Federal Power Commission.

We had not depended on the Federal Power Commission. We had made our own independent study. When we were asked about the $7 million of equity capital, and that was exactly what it was, we did not feel that made a particle of difference in financing feasibility of Trans-Canada as a pipeline. They still had $200 million of senior money to raise; they still had their markets to sign up and had a lot of work to do on construction costs, and we did not feel we were in any position, nor did we want to place ourselves in a position, to sign a contract at that time and accept a contingent liability by way of $50 million.

Q. In other words, as I understand from what you are saying, from the standpoint of your company, which was correct, the position you had to look at was that you could not see the wisdom in putting yourself in a position where you were going to have to spend $50 millions developing your fields, if you were not satisfied that the project was going to go?

MR. LOUGHNEY: That is correct.

Q. I can clearly understand that. The only other thing I want to know, and you have a perfect right to this view, do not think for one moment I am suggesting there is anything wrong with it -- but was there any consideration given by you as to your unwillingness to obligate yourself to make this expenditure, to get into this thing, if there was a possibility because of this conversion feature, that the control of Trans-Canada could pass to a Government agency?

MR. LOUGHNEY: Well, we were not -- certainly, we were not pleased at the manner in which the I.D.B. proposed to place itself. We felt that was not in the best interests of Trans-Canada nor anyone that did business with them.

Q. I certainly want you to understand on behalf of the Commission, Mr. Loughney, that there is no suggestion that your companies have in any way not cooperated with the governments, and I accept your statement fully.

MR. LOUGHNEY: Right, sir.

MR. PATTILLO: Mr. Chairman, I have concluded my part of the examination regarding the Trans-Canada matter. It may be that Mr. Frawley wants to ask some questions about that, or members of the Commission may wish to do so.

THE ACTING CHAIRMAN: Do you mean Trans-Canada or B-A Oil?

MR. PATTILLO: No. I would go to the brief of the company now, but, rather than get the two confused, I think that perhaps if any questions are to be directed to the matter on which I have just been questioning Mr. Loughney, they could be directed at this stage.

THE ACTING CHAIRMAN: Mr. Frawley, do you have any questions?

MR. FRAWLEY: Mr. Chairman, no. I have some questions to ask Mr. Loughney based upon his conclusions as they appear on page 17 -- the export policy which he advocates.

THE ACTING CHAIRMAN: I only have a short question, Mr. Loughney: do you really think

these 70 million convertible debentures meant the control of Trans-Canada? Was it enough to have control?

MR. LOUGHNEY: Yes, it was.

MR. PATTILLO: Q. Mr. Loughney, on page 3 of the company's submission, in the first paragraph where you say, "British American is a major holder of gas reserves in Canada and has been concerned for many years with the problems relating to the production and disposal of natural gas", it would be more correct to say, wouldn't it, that since July 1st, 1956 British American is the major holder of gas reserves in Canada, and prior to that time it was Canadian Gulf that was the major holder?

MR. LOUGHNEY: Yes, sir.

Q. Still looking at this page, "British American has a proven marketable reserve of natural gas of 3 trillion cubic feet located in fields throughout Western Canada. This reserve represents an investment at December 31st, 1957, of $48.6 million in gas wells and properties, gathering systems, processing plants and related facilities". I can appreciate that there is no problem in arriving at the cost of the gathering systems, the processing plants and the related facilities, but to get the remainder of the cost of your investment in gas wells and properties, must there be some allocation as between gas and oil?

MR. LOUGHNEY: We took three areas in which we are working primarily. The results of our work have produced gas, and no evidence so far of oil, and we considered that Pincher Creek, the area of British Columbia with the exception of one field, and the Central Foothills, as being primarily an exploration -- an area in which gas is predominant. Therefore, we have allocated our exploration effort in the area against gas.

Q. And that is how that portion of the 48 million comes into the picture?

MR. LOUGHNEY: That is right, yes, sir.

Q. On page 4 you speak about the quantity that you estimate will be found of natural gas liquids including condensate, and you say that ultimately you think there will be 6.3 billions of barrels. Of the 3 trillion that the company presently has in the way of reserves what percentage is associated gas, what percentage is what I will call dry gas -- would you give us those, approximately?

MR. LOUGHNEY: I believe Mr. Strand had better answer that question.

Q. Yes.

MR. STRAND: Of our reserves, 84.7 per cent is made up of non-associated gas; 9.5 per cent is made up of associated gas; 5.7 per cent is made up of dissolved gas. That represents the

total of our gas reserves.

Q. And have you made any calculation as to the barrels that you anticipate in your reserves you have of natural gas liquids including condensate? Have you worked that figure out at all in barrels?

MR. STRAND: You are referring to our own company reserves?

Q. That is right.

MR. STRAND: Yes, we have.

Q. And could you give that figure? If for any reason you don't want to give that figure, just give me the explanation. The reason I am inquiring about it is that we have had some evidence about the problem of the natural gas liquids and the problem of sulphur, and I want to address some questions to you about those problems, but I wanted to see how big a problem it may be for you people and how much you might have considered it.

MR. STRAND: Our estimated natural gas liquid reserves are approximately 140 million barrels.

Q. What can you tell us, Mr. Loughney -- or any one of the gentlemen to whom you wish to refer the question -- as to that magnitude of reserves and the problems of marketing them and the problems that other producing companies will have with those products?

MR. LOUGHNEY: I would rather answer the question on the basis of our own problems.

Q. Right.

MR. LOUGHNEY: We recognize that the disposal of products -- lpgs -- is going to be a real problem; there is no question about it. We feel that in the earlier years that the western provinces will probably consume a good part of the propane. The problem of butane is much more complicated, and to that end we have done a considerable amount of work in trying to work not only to consume the butane in our own operations, but we have carried on conversations and negotiations with other companies to interest them in locating in the west and using some of the butane in their operation. So far our big problem has been that any industry that would be attracted, naturally, would need large quantities of butane, and the difficulty is trying to tie down the point at which time those quantities will be available. The matter of condensate has been given considerable study: we are still working on the problem. We feel that a part of our over-all problem with respect to gas and the economics of gas is to undertake studies, make long-range plans, and find the markets which we think ultimately will be found. I would assume that any producer or group of producers which were contemplating a contract for the

[illegible]

sale of gas that would require a plant must be doing the same thing.

Q. Would you think that this problem of the lpgs and the condensate would in any way retard the production of these gas reserves of your company and the other producers in the province?

MR. LOUGHNEY: I don't feel it would retard the production, because by the time we are in a position to produce we should have pretty well worked out our problem in advance, but it might have some effect on the willingness of producers to build plants and produce their gas if they had no means of disposing of these products, because they are an important part of the pay-out in any plant.

Q. I was going to say, does the question as to whether or not you can see markets for them have any effect at all on the price which the producer must get for his gas in selling to a transmission company?

MR. LOUGHNEY: Well, it should have a bearing, but I can't say up to this point it has had, because we have not had too much of an opportunity to negotiate for the sale of gas on the basis of what we think gas is worth.

Q. Perhaps at this point you might be prepared, as a producer -- as the first big

producing company that has come before the Commission -- to express some views on how you consider the price of gas could be determined? When you say "What it is worth" what factors have to be taken into consideration? We have had evidence from Westcoast, from Alberta and Southern and from Trans-Canada as to what they have been offering, and what Westcoast and Trans-Canada are presently paying, but that is all we have had, and I am sure the Commission would appreciate it very much if you would care to express some views to assist them?

MR. LOUGHNEY: Well, we feel gas should net back to the producer the value that is representative of the view at the point of delivery. In other words, gas sold in Eastern Canada, backed by transmission costs, should result in a cost to the producer that gives him the best return, recognizing the competitive price at which the gas must be sold at the other end.

Q. Let me see if I have that clear: taking the case of Trans-Canada and Eastern Canada, if you found that in order to have gas to be competitive in Toronto, for instance, it had to sell at $1.37, then you figure the distributor's costs and allow him a margin of profit; then you figure the transmission costs that represent the return at 7½ per cent and that gets you back to what the field price of gas should be.

MR. LOUGHNEY: That is the first calculation. Then, we take that price and work the economics of the field, the number of wells that have to be drilled and the plants used in the economic study. The projected cost of gas plus an extra of what we feel we could sell our by-products and that should return a profit on the economic data.

Q. Now, is there any yardstick that is generally used in the industry as to what is considered a fair rate of profit on this sort of thing or is it what you can get?

MR. LOUGHNEY: Well, I expect most every company has an idea of what the profit should be.

Q. Well, can you help the Commission at all as to that?

MR. LOUGHNEY: On an after-tax basis?

Q. Yes.

MR. LOUGHNEY: We would consider 10 per cent to 12 per cent on plant projects of that type.

Q. Now, have you in your company any problem with sulphur?

MR. LOUGHNEY: Are you talking about long range or short range?

Q. Well, in these reserves that we have been talking about, your present reserves?

MR. LOUGHNEY: Well, as of right now we are producing sulphur and we are selling all of the sulphur that we produce.

Q. And there appears to be a good market for it in Canada, is that correct?

MR. LOUGHNEY: There appears to be a good market potential in Canada but the problem is one of transportation in being competitive in the eastern part of Canada where most of the market is, with shipments of sulphur coming in by water from other areas.

Q. And can the sulphur operation, with that problem of transportation, be made to be profitable

itself at the present time?

MR. LOUGHNEY: I am not sure I understand the question.

Q. Well, the sulphur operation by itself, with the problem of competition that you were speaking about and the cost of transportation, can it be made by itself a profitable operation or is it merely something that must be worked out as a salvage operation in trying to reduce your cost?

MR. LOUGHNEY: No, we do not consider the sale of sulphur as a salvage operation. We think if it is properly handled that it will be a profitable operation.

MR. PATTILLO: I think, Mr. Chairman, if we adjourn now that I probably could conclude the matter much more quickly in the morning if I have a chance to look over my notes and have them in better order than I presently have.

THE ACTING CHAIRMAN: Very well, we will adjourn until tomorrow morning at ten o'clock and continue with British American Oil.

---Whereupon the hearing adjourned at 4.25 p.m. until 9.45 a.m., Thursday, February 27, 1958.